ORIGINAL ARTICLE

Prevalence of Glaucoma after Cataract Surgery in Children

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ABSTRACT

Aim: To find prevalence of Glaucoma in children after cataract surgery.
Methods: in this prospective study, 50 eyes of 37 patients were included. All the patients were admitted. Duration of the study was one and half year. All pts 2months to 5yrs of age were included.
Results: out of 50 eyes, 9 eyes developed Glaucoma. There was no significant statistical difference between pseudophakic and aphakic eyes.
Conclusion: Our results show the importance of careful follow up of intraocular pressure, cup disc ratio, axial length measurement, and myopic shift on retionoscopy after cataract surgery in children.
Keywords: Glaucoma, Cataract, Amblyopia.

INTRODUCTION

Cataract in children is a most important cause of visual impairment and if not treated at proper time even causes blindness. As decreased vision in early years of life can adversely affect the overall development of child personality, education, social aspect and occupation in adult life. Treatment of congenital or developmental cataract possesses a challenge to the ophthalmologist, patients and parents in terms of visual development and rehabilitation[1,2,3,4]. Deprivation amblyopia is major cause of loss of visual function in these children. An improved understanding of the neurophysiology of the visual system and concepts of latent, critical and sensitive periods of visual development, has led to improvements in the management of affected children.

Among post operative complications Pediatric aphakic glaucoma is one of the most important post operative complications and serious cause of late visual loss following pediatric cataract surgery[5,6,7]. The precise cause for the open angle glaucoma in aphakic children remains unclear[8,9,10,11,12]. Both chemical (inflammatory cells, lens remnants and vitreous derived factors) and mechanical (lack of ciliray body tension and trabecular meshwork collapse) theories has been proposed. The well documented risk factors for aphakic glaucoma include microcornea, poor pupil dilatation, early surgery, and nuclear cataract.

MATERIAL AND METHOD

In this study, 50 eyes of 37 patients were included. All the patients were admitted. Duration of the study was one and half year. All patients having the age 2 months to 5 years, who fulfilled the criteria, were included.

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RESULTS

Thirty seven children (50 eyes) with congenital cataract who fulfilled the inclusion criterion were enrolled. In the study 37 children and 50 eyes were operated. Children were categorized in two groups. Group 1, includes 02 months to 2 years and Group 2, includes 2 years to 05 years. 20 eyes were included in Group-1 i.e., 40% and in Group 2, 30 eyes 60% were included. Group-1 children under went cataract surgery (CCC, I/A, PPC, A/V) without IOL and Group-2 children underwent cataract surgery (CCC, I/A, PPC, A/V) with IOL implantation. Study was prospective and duration was 18 months. Glaucoma was noted in 09 eyes out of 50 eyes i.e., 18%. Glaucoma was detected in 01 eye after 2.5 months after the operation. In 02 eyes glaucoma was noted 05 months after the operation and 06 eyes glaucoma was noted in 01 year after the operation.

Table 1: Procedures for the treatment of cataract (eyes: 50)

Group	Procedure	n	%age
I	I/A, PPC, A/V	20	40.0
I	I/A,PPC,AV+IOL	30	60.0

Table-2: Complications rate of cataract surgery (n=50)

Per. Op. complications	n	%age
Iatrogenic damage to Iris	04	08.0
Vitrious prolapsed	05	60.0
Post.op. complications		
Corneal edema/striate keratopathy	04	8.0
Wound leak	01	02.0
Iritis	12	24.0
Raised IOP	09	18.0
PCO	20	40.0
IOL malpositioning	02	O4.0

Table 3: Raised IOP/ Glaucoma **(**n=50)

Characteristics	n	%age
Raised IOP	09	18.0
Group-I	04	08.0
Group-II	05	10.0
Bilateral	06	12.0
Unilateral	03	06.0
Aphakic	04	08.0
Pseuphakic	05	10.0
Medical treatment	09	18.0
Surgical treatment	02	04.0

Table 4: Timing of raised iop (n= 09)

No. of eyes	Timing of raised IOP	%age
01	2.5 months	11.0
02	6 months	22,0
06	After 1 year	66.0

DISCUSSION

In order to rule out the risk factors of the pediatric aphakic glaucoma in children operated for the cataracts in our settings we excluded all the cases of the cataracts associated with the glaucomas[13]. We took 37 children suffering primary congenital cataract. The age of the patients was between 02 months to 05 years and 50 eyes were operated. We divide them in two groups. Group-1 includes age between 02 months to 2 years; group-2 includes age between 2 years to 5 years. In group-1 (I/A, PPC, A/V) was done and in group-2 (I/A, PPC, A/V, IOL) was done.

All children were operated by the senior ophthalmologists. Children were followed and examination under general anesthesia at 01 month after the operation, 03 months, 06 months, 01 years and finally 1½ year after the operation.

Raised IOP was insidious and was discovered on routine EUA in 09 eyes (18%). In all 09 eyes, that developed glaucoma, bilateral cataract was noted i.e. 06 eyes, unilateral cataract was noted in only 03 eyes. 01 eye show raised IOP spikes after 2½ month after the operation, 02 eyes shows raised IOP spikes 06 months after the operation, 06 eyes shows IOP spikes one year after the operation. 09 eyes that developed glaucoma nuclear cataract was noted 05(55%), cortical cataract in 02(22%), posterior polar cataract in 02. Microcornea noted in 02(22%) eyes. Open angle glaucoma noted in 8 eyes(88%), angle closure glaucoma noted in 01 eye(11%). But period of study was 1½ yrs. This was limitation of our study.

We noted in 1½ year study, that 50 eyes were operated for the congenital cataract. Age of the patients were 02 months to 05 years 9(18%) developed glaucoma. As compared to other international studies it is reported that after pediatric cataract surgery, 10(3.8%) of 266 eyes with primary intraocular lens implantation were diagnosed as glaucoma, whereas 8(17%) of 47 aphakic eyes were diagnosed with glaucoma[14,15]. During the initial analysis, we noted that all of the patients who developed glaucoma underwent cataract surgery when they were 4.5 months or younger[16]. Urban et al in their retrospective study with mean follow up of 6.2 years noted 9.8% glaucoma rate after congenital cataract surgery. They included 113 eyes 101 pseudophakic and 12 aphakic eyes. Open angle glaucoma noted in 6 pseudophakic and 2 aphakic eyes and narrow angle glaucoma noted in 3 aphakic eyes[17]. Egbert JE in his prospective observational study a total of 63 patients (22 with bilateral cataracts and 41 with unilateral cataracts) were examined at a median follow up of 15.1 year after surgery. He noted glaucoma in 19% (12/63). 7/12 eyes developed glaucoma within first 5 year and remainder 5/12 eyes developed glaucoma during follow up observational period. After comparing the results with the international studies this is proved that glaucoma is an important vision threatening complication that can occur in some cases within one year after the surgery or may be later then 1-7yrs as mentioned in literature but may be as late as 10 year[18].

CONCLUSION & RECOMMENDATIONS

Our results show the importance of careful follow up of intraocular pressure, cup disc ratio, axial length measurement, and myopic shift on retionoscopy after cataract surgery in children. It is noted that aphakic glaucoma in children is not uncommon problem. It is recommended that every child under going cataract surgery must be care fully followed even up to 10 yrs.

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