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Research Article

**A STUDY ON THE CONSEQUENCES OF CATARACT
SURGERIES IN MICROOPHTHALMIA**¹Dr Zafar Iqbal, ¹Dr Maisa Al Sweilem, ²Dr Aswad Ahmed, ¹Dr Sidra Zafar Iqbal,³Dr Muhammad Saad Ullah¹Alshifa Eye Hospital Sukkur²Isra University³Teaching Hospital D.G. Khan Medical College D.G. Khan**Abstract:**

Objective: The aim of this research work is to determine the consequences of the cataract surgery in Micro ophthalmia in the infants having less than two years of age.

Methodology: This was a transverse research work carried out in the ENT department of the Alshifa Eye Hospital Sukkur from January 2018 to August 2019. This research work selected 29 micro-ophthalmic eyes of children with cataract having age of the lower than 2 years. All these children had cataract surgery with no implantation of the intraocular lens. The globe's axial length was 19.0 mm or lower in all the 29 eyes of the 15 children. 10 children were present with the bilateral cataract and 4 children were present with the unilateral cataract.

Result: Total 29 micro-ophthalmic eyes from 15 children suffering from congenital cataract of this research work. 10 patients were present with bilateral cataract and 4 patients were present with unilateral cataract. The average pre-operative IOP was 7.0 ± 1.18 mmHg & post-surgery IOP after complete 90 days was 8.88 ± 1.18 mmHg. Secondary capsular opacification was present in 15.58% (n: 3) patients. 2 patients were present with the posterior synchiae (9.78%) after 90 days of surgery.

Conclusion: The findings of this research work conclude that cataract surgery is very secure method for micro-ophthalmia. The complications after the surgery were not beyond limits. A research work for a long duration with the utilization of the intraocular lens is the need to consolidate the findings of this research work.

KEYWORDS: Intraocular Lens, Globe, Axial, Retina, Congenital, Microophthalmic, Cataract, Surgery.

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INTRODUCTION:

Congenital cataract is very frequent reason of the blindness among infants. The development of the vision system relies in children in the images are sharp, clean and focused on the retina of the eyes. This problem of cataract restricts the clear images on the surface of retina. Timely identification, proper surgical intervention and proper follow ups play important role for the restoration of the vision of children in case of cataract with opacity, otherwise there can be observance of the amblyopia. The globe with total length of axial that is minimum 2 SDs (Standard Deviations) below the average for that age is micro ophthalmia. The prevalence of micro ophthalmia at the time of birth is about fourteen per 100000 children. Among young infants, it is very important to solve the aphakia as early as possible after the mitigation of cataract.

There can be implantation of the IOL after surgical intervention but it is not easy because at the time of birth the shape of the lens is highly spherical as compared to the adults and it has the power of approximately 30D, which compensates for the shorter axial length of an eye of baby. If the size of cataract is greater than 3.0 millimeters of diameter in pupil center, all are thought to be visually important. The evaluations of the acuity vision, extra-ocular motility & to know about alignment are the challenges for the professionals of this very field. It is very complicate to identify the pre-verbal infants who cannot tell about the condition after surgery.

METHODOLOGY:

This research work carried out in ENT department of the Alshifa Eye Hospital Sukkur from January 2018 to August 2019. Micro-ophthalmia is not common complication and because of long probability, this research work was of short duration. There were 15 infants with less than two year of age, were the part of this research work. This research work performed on 29 patients. 10 patients were present with the bilateral cataract and 4 patients were present with the unilateral cataract with micro-ophthalmic eyes. The patients with other complications like trauma, inflammation and tractional retinal involvement were not the part of this research work. We collected the previous history from the parents of the patients. We examine the lens, pupil, and clarity of cornea, anterior chamber and posterior chamber with the help of the handheld slit lamp. The dilation of the pupil carried out with 2.48% phenylephrine and 0.48% tropic amide for examining the kind, density and location of the cataract.

Objective visual acuity evaluation was not possible because of the dens cataract, very young age and no cooperation from the side of patients in before surgery and after surgery situations. We used the CSM procedure to check the vision. For the patients present with the hazy fundus vision, we performed the ultrasound. On the day of surgical intervention, we dilated the pupil with 2.48% phenylephrine & 0.48% tropic amide. After that we used the standard procedure of surgery to remove cataract. We called the patients on 1st day, 7th day, after one month and after three months for follow up. We prescribed the patients with topical steroids & topical antibiotic after surgery. We also advised 1.0% homatropine two times in a day for at least one week and then lessened it in accordance with the situation. We carried out the examination of anterior segment on every visit of the patients to check the clarity of cornea, synachae, and post-capsule opacification. We checked the vision on 7th day, one month and 3rd moth visit of the patients. We checked the IOP with the help of Perkin's tonometer after one and third month visit. We repeated the retinoscopy after one month and three month of surgery. We carried out the counseling of the parents of the infants about the removal of the sutures of cornea after one month and implantation of the intra-ocular lens at the age of complete 2 years of patients.

RESULTS:

Total 29 micro-ophthalmic eyes of 15 children present with cataract were the part of this research work. There were total 56.78% (n: 10) male and 39.18% (n: 5) female patients. Total 10 patients were present with the bilateral cataract and 4 patients were present with the unilateral cataract. The average age of the participants was 7.48 ± 1.28 months. The younger patient was present with 5 month of age and elder one was present with 18 month of age. We faced no complication in the duration of surgery. We found the average axial length as 12.38 ± 2.38 mm at the time of surgery.

The average pre-operative IOP was 7.0 ± 1.18 mmHg & post- surgery IOP was 8.88 ± 1.18 mmHg after complete 90 days of surgery. There was raised post-surgery IOP in 27.38% (n: 5) patients and their treatment carried out pharmacologically. There were 15.58% (n: 3) patients present with the secondary capsular opacification. And 9.78% (n: 2) patients were present with the posterior synachae.

DISCUSSION:

Normally, the axial length of the eyeball of a new born baby is approximately 14.0 mm. In infants, this eye ball grows to a diameter of 19.50 mm and it

gradually grows to the diameter of 24 to 25 mm. The complete elaborate understanding of the anatomy will be sufficient for the specialist to remove any hurdle or face serious complications easily. The simple micro-ophthalmia shows that their length of axial was too small but the size of the globe was normal. One research work proposes that in the micro-ophthalmic eyes of small children, primary implantation of the IOL is very controversial because of the complications in implantation in very small eye. One other research work excluded the microophthamos for the implantation of the primary IOL. This is very hard to identify and treat the aphakic glaucoma because such infants can remain without any symptom, regardless of their IOP of high value. In this current research work, we took the intra-ocular pressure pre-surgical and post-surgical intervention under GA (General Anesthesia), average pre-operative IOP was 7.0 ± 1.18 mmHg & IOP after 3 months of surgery was 8.88 ± 1.18 mmHg (Table-1).

Table-I: Pre and Postoperative IOP

IOP	Mean \pm SD
Pre op baseline IOP	7.00 ± 1.18
4th Week IOP	8.48 ± 2.88
IOP at 3rd Month	8.88 ± 1.18

The average age at the time of surgery in this research work was less than 2 years, in one other research work, the patients were younger than 2.48 month of age. One research work on 113 patients stated the glaucoma after surgery in 9.70% infant's eyes and there was need of anti-glaucoma medications & there was need of another surgery in three patients. One other research work noted the very high rate of complication with the implantation of the intra-ocular lens in children of very young age and there was a need of another research work in the very first year of the first surgery as compared to the infants who underwent to vitrectomy surgery with no implantation of the IOL. There are also very low chances of the glaucoma in the patients of aphakik as compared to the patients of psudophakik. There was very intense inflammatory response in the young infants. Almost all the patients were present with very careful anterior vitrectomy after the removal of the cataract to keep away from the posterior capsular opacification. Total 9.78% patients were present with the posterior synachae which is very much similar to the research work of past. There are some limitations of this research work as we were not able to evaluate the acuity of the vision before surgery because of the dense cataract and very young age. There is a requirement of follow up for long duration for complications of microophthalmic eyes after the

secondary implantation of the IOL, for that very reason, we were holding the records safe of our patients.

CONCLUSION:

The results of this research work proposes that cataract surgery is very secure, effective and suitable procedure in micro-ophthalmia of eyes with small size and their outcome was better vision after its application. This procedure also has some minor complications as glaucoma, post-synachea & obscuration of the vision.

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