

Challenges and Visual Rehabilitation after Pediatric Cataract Surgery

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Received : February 20, 2021
Accepted : November 8, 2021
Published : November 25, 2021

Abstract

Background: The most frequent post-operative complication of pediatric cataract surgery is posterior capsular opacity (PCO) that can obscure the visual axis causing amblyopia in children. Combination surgery and visual rehabilitation might be needed to overcome the complication after pediatric cataract surgery. **Case Report:** A 4-year-old-girl with a history of congenital cataract came to our tertiary hospital. She had undergone cataract surgery around three years ago. She did not wear any glasses and did not attend any follow-up due to economic circumstances. Examination revealed low vision, exotropia, a good position of IOL (intraocular lens), and fibrotic posterior capsular opacity. She underwent second surgery consisting of membranectomy, secondary posterior capsulotomy, and anterior vitrectomy for both eyes. Post-operative examination revealed sensory deprivation amblyopia on her left eye. Visual rehabilitation such as giving a spectacle and initiating occlusion therapy for two hours each day were given on her right eye. **Conclusion:** Secondary posterior capsulotomy surgery and visual rehabilitation of the eye after pediatric cataract surgery is needed to achieve better prognosis in patients.

Keywords: Amblyopia, Cataract, Lens Opacities, Pediatrics, Rehabilitation, Secondary Cataract.

Introduction

Childhood cataract is one of the leading causes of treatable blindness in children. It is well known that the most frequent post-operative complication in pediatric cataract surgery is posterior capsular opacities (PCO) that can block the visual axis causing amblyopia in children [1]. This case report wants to emphasize the challenge in the management of PCO and visual rehabilitation of the eye after pediatric cataract surgery to achieve better prognosis in patients.

Case Report

A 4-year-old girl with a history of congenital cataract was referred to our tertiary hospital. She had undergone a cataract surgery when she was ten months old and twelve months old, for her left eye (LE) and right eye (RE), respectively. However,

she did not get any spectacles prescription after surgery. A year later, her eyes started to misalign, and she often tripped over the things around her. Nevertheless, she did not go for a consultation.

Our examination revealed 15° exotropia of the LE [Fig.1]. Uncorrected visual acuity (UCVA) of the RE was 6/60, and her LE was 1/60. Both of her eyes were pseudophakia with a good position of the IOL. PCO was found in both of her eye [Fig.2a,b]. Ultrasound (USG) examination was within normal limit. She was planned for membranectomy, secondary posterior capsulotomy, and anterior vitrectomy for both eyes, a month apart, starting with her left eye. One month after surgery of the right eye, her best corrective visual acuity (BCVA) was 6/19 for RE and 1/60 for LE. She got spectacles power S -2.25 C -4.00×170° for her RE and S -0.5 C -3.00 x×180° for LE, and she had an additional

occlusion therapy on her RE for two hours each day to treat her amblyopia and sensory exotropia. She returned to her home town for a routine monthly follow up with the local ophthalmologist.

Discussion

PCO is a multifactorial process, and several techniques has been invented to reduce it. Recently it has become standard of care to perform a posterior capsulectomy with or without anterior vitrectomy at the time of cataract extraction in children under the age of eight to decrease the risk of re-proliferating of equatorial lens cells. Furthermore, posterior capsulectomy has been done in younger children and those with a mental handicap, anticipating that these patients would have an opacification of the posterior capsule and they would be more difficult to have with a Nd:YAG laser capsulectomy [2-4]. In this case, she underwent her first cataract surgery without primary posterior capsulectomy when she was 10 months old. A year later she started to trip over things which might be due to her PCO.

There are several options to restore a good vision after cataract surgery, such as IOL, glasses, or contact lenses. In children, eye-glasses still have an important role because the power of an IOL is rarely exact for the current refractive error; thus, frequent fine-tuning of the refractive error with glasses is needed [5-6]. Our patient did not get a spectacle prescription and never had a proper follow-up for her visual acuity resulting in deprivation amblyopia in her LE. Over the last 20 years, there has been minimal research evaluating the impact of active amblyopia therapies on aphakia/pseudophakia [4,6]. In general, if there is amblyopia, a conventional approach is typically employed, starting with ensuring the proper refractive correction followed by occlusion therapy. A commonly quoted rule for infants is 1 hour per month of age per day for up to 50% of waking hours, which is then continued for years,



Fig. 1: Examination revealed 15° exotropia on her left eye.

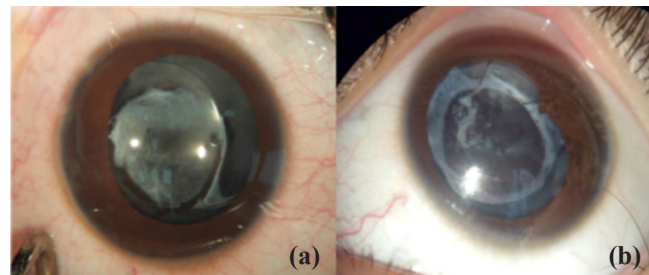


Fig.2: A dense posterior capsular opacification developed after cataract surgery without posterior capsulectomy; (a): Right eye; (b): Left eye.

hence frequent educations to the parents about the need to maintain the occlusion should be done [6]. The goal of treatment for stimulus deprivation amblyopia (SDA) is to improve vision in the affected eye and to provide stereopsis. Even though the effectivity of occlusion therapy for SDA has not been established. In this case, we decided to do the occlusion therapy for two hours per day.

Conclusion

Long-standing PCO may lead to amblyopia and strabismus. Combination treatments, including removal of the PCO, correction of refractive error, and occlusion therapy, might be needed to overcome the complications. However, the result may vary; thus, immediate treatment of PCO is preferred.

Contributors: DY, R: writing manuscript, conceptualization, patient management; R and LD were responsible for revising it critically. LDDY provided critical inputs in manuscript. DY will act as a study guarantor. All authors approved the final version of this manuscript and are responsible for all aspects of this study.

Funding: None; *Competing interests:* None stated.

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