·Letter to the Editor·

Ciliary body detachment after secondary intraocular lens implantation in childhood

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Dear Sir,

I am Dr. Li-Na Meng, from the Qingdao Eye Hospital, Shandong Eye Institute, Shandong Academy of Medical Sciences, Qingdao, China. I want to present a rare case of secondary intraocular lens (IOL) implantation in an 11-year-old boy who developed the complication of ciliary body detachment.

When he was 2 years old, the boy underwent bilateral cataract extraction for congenital cataract in the other hospital. One month later, leukocoria (white pupil) was detected in the left eye and then the patient was referred to our hospital and treated by coreoplasty and anterior vitrectomy. The patient wore spectacles to correct the vision for 10 years before bilateral IOL implantation was performed at our hospital.

The uncorrected visual acuity was 0.2, and the best corrected distant visual acuity was 0.8 (Vod 0.8×+6.25DS/+2.00DC×85 Vos 0.8×+7.25DS) in both eyes. The intraocular pressure (IOP) was 12mmHg in the right eye and 13mmHg in the left eye. There was no hyperemia in the conjunctiva; the cornea was transparent; the anterior chamber depth was normal; the aqueous humor was clear; the lens was absent; the vitreous and retina were roughly normal in the two eyes. The pupil was not round in the right eye, while posterior synechia of the iris was present without lens membrane in the left eye. He was diagnosed with bilateral postoperative aphakia, which required secondary IOL implantation in both eyes and after-cataract resection in the left eye. Both IOLs (Bausch & Lomb AKREOS-ADAPT +13D in the right eye, and Bausch & LombAKREOS-ADAPT +12.5D in the left eye; Bausch & Lomb, Rochester, NY, USA) were implanted in the ciliary sulcus uneventfully. The right eye recovered well, achieving visual acuity of 0.7 and IOP of 19mmHg. During the left eye surgery, the iris rear was observed to closely adhere to the lens capsule membrane. So the surgery became tricky. An iris restorer was used to cut the capsule hook and separate it from the superior, temporal, and inferior iris, and capsule membrane. The temporal adhesion was cut using capsule membrane scissors. Because the surgery was blindly handled after the iris, pars plana was accidentally injured. In the left eye, however, the visual acuity was 0.1, and the IOP was 6mmHg on the second day. No improvement was observed at 1 week. Ultrasound biomicroscopy (UBM) presented more cortex residuals at the lateral nasal quadrant and upper quadrant of the lens, IOL offset, obvious leakage from ciliary body cavity, and impaired ciliary body at half past 3 to 4 o'clock. B-ultrasonic diagnostic images showed vitreous opacity, choroidal retinal edema, and peripheral choroidal detachment, and optical coherence tomography (OCT) displayed marked macular edema. Therefore, ciliary body detachment and choroidal detachment were also diagnosed for the left eye, and surgery for ciliary body reattachment was performed at 2 weeks. Intraoperatively, air was injected into the vitreous to elevate IOP, and the ciliary body was sutured and reset. An arcuate lamellar scleral flap, approximately a half of sclera thickness, was placed 4mm away from corneal limbus at 3 to 5 o'clock. After the deep sclera was cut, the fluid outflowed. A continuous 9-0 nylon suture was used to suture the deep scleral incision and fix the ciliary body. Then an 8-0 absorption suture was applied to suture the superficial scleral flap.

Atropine was administered to dilate the pupil postoperatively, and the IOP was as high as 38mmHg. After the beta-adrenergic blocking drugs, timolol maleate and prostaglandin analog travoprost were given, the IOP was decreased to 16mmHg. The visual acuity was 0.7. UBM showed that the injured ciliary body was well sutured with no leakage. B-scan demonstrated that the peripheral choroid became normal, and the choroid and retina were reset. OCT showed no macular edema(Figures 1, 2).

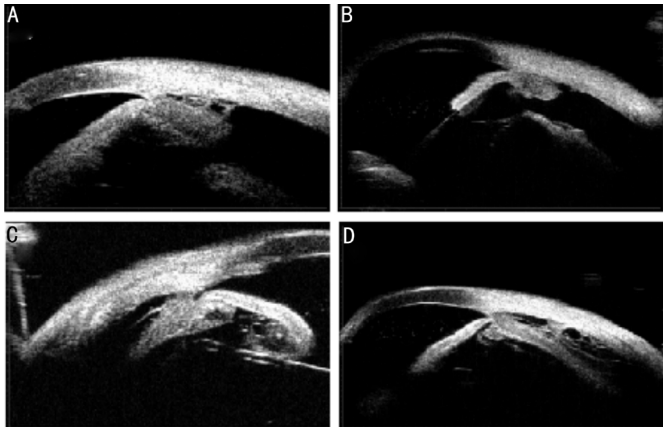

Figure 1 Ultrasound biomicroscopic images of impaired ciliary body (A and B), with obvious leakage from ciliary body cavity and ciliary body detachment (C and D) before surgery.

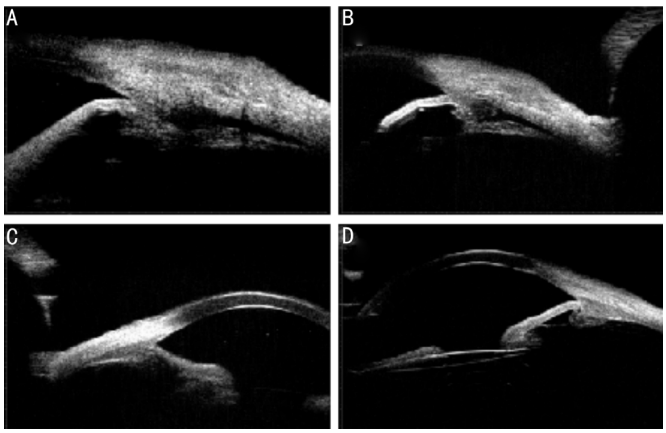

Figure 2 Ultrasound biomicroscopic images of the healing of the ciliary body at 1 week after surgery (A and B) and its reattachment at 3 months (C and D).

DISCUSSION

Secondary IOL implantation may occasionally generate postoperative complications, such as iris cyst, especially in children [1]. Capsular fibrosis and posterior synechia may cause a shift of the ciliary process to the pupil center, which brings difficulty to secondary IOL implantation in childhood. At present, there are many studies about the secondary IOL implantation after congenital cataract. Kim *et al* [2] reported secondary IOL implantation around 2 years of age. Vision-threatening complications may include re-growth or phimosis of the posterior capsule opening or endophthalmitis[3-4].

In this case, the iris at the nasal side was found to adhere to the lens capsule membrane by UBM preoperatively, with an abnormal ciliary body, indicating that the local ciliary body was seriously pulled. To avoid complications of secondary IOL implantation, cataract surgery should be performed as carefully as possible to reduce the stimulation of the iris, and activation of the pupil is needed after surgery, with topical administration of glucocorticoids for prevention of adhesion of the iris. Moreover, damage to the ciliary body should be prevented in the process of secondary IOL implantation. Once the ciliary body is damaged, ciliary body suturing may help recover the vision and IOP and should be performed as soon as possible. But this patient received the surgery of ciliary body reattachment at 2 weeks after the ciliary body was detached for his personal reason. During the 3-year follow-up, both visual acuity and intraocular pressure were normal.

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