Surgical Management of A Rare Case of Late Onset Capsular Block Syndrome (CBS)

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Abstract.

Purpose: Capsular block syndrome of late onset is one of rare post-operative complications of cataract surgery. Here we report the diagnosis and successful surgical management of this case.

Case report: A 70 year aged person presented with gradual decrease of right eye vision for 4 years with a history of phacoemulsification surgery which was done 8 years back. Patient’s presenting vision was 6/60 in right eye with a whitish fluid filled like space just behind the intraocular lens (IOL). Patient managed surgically by removal of the ‘IOL-capsule-complex’ with anterior vitrectomy. The microbiological culture report of ‘IOL-capsule-complex’ showed no bacterial growth. Visual rehabilitation was restored by implanting an anterior chamber lens 2 months afterwards.

Conclusion: Though rare but delayed presentation of capsular block syndrome has reported but conventional treatment with Nd:YAG laser capsulotomy may have risk of intraocular infection spread. Extraction of ‘IOL-capsule-complex’ with anterior vitrectomy followed by late implanting an anterior chamber lens can restore the visual function and can lessen the risk of intraocular infection.

Keywords: Phacoemulsification, capsulorrhexis, intraocular lens (IOL), Nd:YAG laser capsulotomy, IOL-capsule complex.

INTRODUCTION

Capsular block syndrome (CBS) of delayed onset is a complication of rare variety after cataract surgery especially after phacoemulsification in case of continuous curvilinear capsulorhexis (CCC) and implantation of in-bag intraocular lens (IOL) [1, 2]. Patient may present with disturbance of vision, usually reduced vision and anterior displacement of IOL due to collection of whitish fluid like material between posterior lens capsule and back surface of IOL which causing distension of capsular bag [3].

Miyake et al. classified CBS in three categories. It may be intraoperative, early postoperative and late onset. Intraoperative type may happen during hydro-dissection when irrigating saline collected between the nucleus and intact posterior capsular and may cause posterior capsular rent and drop of nucleus in vitreous cavity. Early postoperative capsular block occurs due accumulation of viscoelastic material in between posterior capsule and posterior surface of IOL, usually within two weeks after cataract surgery. The late-onset type may occurs after months, even years after surgery due to proliferation and metaplastic changes...
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Figure 1. Fibrosis of anterior capsular (A), Whitish turbid fluidic space behind the IOL (B), After ‘IOL-capsule-complex’ extraction and anterior vitrectomy (C), Late implantation of AC-IOL (D).

of residual epithelial cells which causing characteristic milky-white substances behind the IOL [4].

Literature search showed, the usual presenting time of late onset CBS is about 3.8 years after cataract surgery. There are few reports where it was present even 12 years after surgery [1, 5].

Neodymium-Yttrium-aluminum-garnet (Nd:YAG) laser posterior capsulotomy is the commonly used treatment modality for late onset capsular block, creating path for leakage of accumulated material into vitreous cavity and subsequently improve the visual acuity. Sequestered low-virulent organism may release after treatment with Nd:YAG and can cause intraocular inflammation. Though rare, endophthalmitis due to in Propionibacterium acne infection was reported following Nd: YAG treatment [6]. So clinician should aware about it and in cases where laser capsulotomy is not possible, the removal of whitish material may need surgical intervention [2, 3, 7].

We described here our experience with a late-onset capsular block syndrome occurring eight years after phacoemulsification surgery. It was surgically managed by removal of the ‘IOL-capsule’ as a whole and anterior vitrectomy (AVT) and late implantation of anterior chamber intraocular lens (AC-IOL).

CASE REPORT

A seventy years aged person presented with a history of blurring vision in right eye for 4 years. He had history of uneventful phacoemulsification surgery with implantation of posterior chamber IOL 8 years back in same eye. Presenting V/A in right eye was 6/60 and retinoscopy revealed dull reflex. Slitlamp biomicroscopy showed a whitish and turbid fluid filled area in between the space of posterior lens capsule and intraocular lens (Fig. 1A,B). There was no sign of inflammation in anterior chamber and forward displacement of intraocular lens. Posterior segment could not be visualized due to hazy appearance. B-scan ultrasonography shows attached retina with echo free vitreous cavity. His left was pseudophakic with a vision of 6/9. He had no history of systemic diseases.

Patient was advised for IOL-capsule complex extraction. After getting written informed consent from patient, surgical removal of the ‘IOL-capsule-complex’ under local anesthesia. Intra-operatively, a 6 mm small incision cataract surgery tunnel was made at superior limbus after peritomy. The ‘IOL-capsule-complex’ was removed together with McPherson forceps and anterior vitrectomy was done (Fig. 1C). The IOL-capsule together with turbid fluid sent for microbiological culture. The microbiological culture report showed no indolent bacterial growth. His post-operative period was uneventful. Two months afterwards, the eye became quiet and an AC-IOL implantation was done through superior clear corneal tunnel (Fig. 1D). After 2 months of follow up his BCVA was 6/9 with refraction of −1.50 D cyl 90°.

DISCUSSION

Late onset CBS was reported by Davison in 1990 and it was the first reported case [8]. CBS of delayed type is reported in phacoemulsification with CCC and IOL implantation within bag but very rarely [9]. The incidence of CBS in literature is <1% (0.73%) in phacoemulsification surgery with intraocular lens implantation with in capsular bag in CCC [10].

Late onset CBS may present earlier like, few weeks to months after cataract surgery or may many years after [11]. According to literature search, it was found 12 years after cataract surgery [1, 5] and our case is presented 8 years after surgery. Reduction of visual acuity is the main symptom of CBS without signs of inflammation. In our case patient presented with reduced vision only and he had no sign of intraocular inflammation.

Miyake et al. described the mechanism of late onset CBS. Proliferation and metaplastic changes of cortical cells with in bag causes opacification of posterior capsule and seal the gap between IOL and remaining part of rim of anterior capsular. The opaque fluid is secreted by metaplastic cells which ultimately accumulated behind the IOL [4].

A few literature has reported that Propionibacterium acne may sequestrated in capsular bag in late onset variety [12]. Endophthalmitis due to Propionibacterium acne after laser posterior capsulotomy with Neodymium-Yttrium-aluminum-garnet (Nd:YAG) has been reported by Carlson and Koch [13].
Our case presented 8 years after uncomplicated phacoemulsification surgery. By slit-lamp examination, the posterior capsule was not clearly detected as thick turbid fluidic material hampered the visibility and we were also alert regarding Propionibacterium acnes and therefore performed ‘IOL-capsule-complex’ extraction via a small limbal incision and anterior vitrectomy instead of Nd:YAG laser capsulotomy. Visual rehabilitation was restored by implanting an anterior chamber lens after eye became quiet.

CONCLUSION

A significant loss of vision can occur after a long period of time in CBS. The preferable treatment for delayed onset CBS is Nd:YAG laser capsulotomy and there is a chance of infective endophthalmitis if hidden P. acne is there. IOL-capsule complex extraction with anterior vitrectomy followed by late implanting an anterior chamber lens can restore the visual function and lessen the risk of intraocular infection.

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REFERENCES


