

Late-Onset Capsular Block Syndrome: Unusually Delayed Presentation

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Key Words

Posterior capsule · *Propionibacterium acnes* · Capsular bag distension · Capsular block syndrome

Abstract

Capsular block syndrome (CBS) has been known to occur as a rare complication of cataract surgery with continuous curvilinear capsulorhexis and a posterior-chamber lens implant. Typically, it presents with reduced vision in the early postoperative period and is characterised by a forward displacement of the posterior-chamber intra-ocular lens and an accumulation of intra-capsular opaque material. Management of CBS is usually by Nd:YAG laser capsulotomy. In this report, we describe a unique case of very-delayed-onset CBS with good visual acuity, occurring 8 years after surgery. It was treated successfully with surgical removal of the opaque material.

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Introduction

Capsular block syndrome (CBS) has been known to occur as a rare complication of cataract surgery with continuous curvilinear capsulorhexis (CCC) and a posterior-chamber lens implant. Typically, it presents with reduced vision in the early postoperative period and is characterised by a forward displacement of the posterior-chamber intra-ocular lens and an accumulation of intra-capsular opaque material. Management of CBS is usually by Nd:YAG laser capsulotomy. We describe here a unique case of very-delayed-onset CBS with good visual acuity, occurring 8 years after surgery. We treated it successfully by surgically removing the opaque material.

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Case Report

A 75-year-old lady was referred to the eye department with a 6-month history of misty and fuzzy vision in her right eye. Her left eye was asymptomatic. Eight years earlier, she had undergone uncomplicated bilateral cataract surgery by phacoemulsification with lens implants. Upon examination, her LogMAR scale best-corrected visual acuity (BCVA) was 20/20 in both eyes. Refractive error was -1.50 DS for the right eye and $+0.25$ DS for the left eye, which suggested a myopic shift in the right eye. The left eye was normal, but there was a hazy appearance in the right eye in the retro-lenticular space between the posterior surface of the lens optic and the posterior capsule. The space was homogeneously whitish and slightly opalescent, characteristic of a milky, turbid fluid (fig. 1). There were no signs of inflammatory activity. On clinical examination, the lens implant did not appear to have shifted forward and the fundus examination was normal.

She agreed to undergo surgical removal of this fluid under local anaesthesia. Intra-operatively, a 30-gauge needle mounted on a 1-ml syringe was passed through the sclera and pars plana, 3.5 mm behind the limbus in the infero-temporal quadrant. The needle tip was gently passed through the posterior capsule and 0.2 ml of the turbid fluid was aspirated and then sent for microbiological culture and analysis. Intra-vitreous vancomycin (1 mg/0.1 ml) was administered at the end of the procedure. She was reviewed after 5 days and there were no signs of inflammation or endophthalmitis. In addition, her myopic shift had disappeared and she now had a $+0.25$ DS for both eyes, both still with a BCVA of 20/20. The microbiological report did not show any signs of indolent bacterial growth. Two months afterwards, at follow-up, she was asymptomatic and reported complete resolution of her misty vision. Examination showed a BCVA of 20/20, with a clear papillary axis and an intact posterior capsule and lens implant. Inferiorly, there was opacity of the posterior capsular area (fig. 2).

Discussion

Davison [1] first reported the condition in 1990. It is mainly known to occur with CCC and phacoemulsification, but has also been reported with can-opener-type capsulorhexis [2], extracapsular cataract extraction [3] and intra-ocular lens implantation in the sulcus [4, 5]. The main symptom is reduced visual acuity with no other signs of inflammation. Our case did not have reduced visual acuity and only had symptoms of haziness and mistiness, which is quite unusual and, to the best of our knowledge, has not been reported in the literature before.

Miyake et al. [6] divided the condition into 3 different types, depending upon the time of onset: intra-operative, early post-operative and late post-operative. They postulated that, in the late post-operative period, the cortical cells undergo metaplastic changes and proliferate in the bag, which leads to posterior capsular opacification and also causes occlusion of the capsular opening by sealing off the gap between the anterior capsule and the lens implant. These metaplastic cells also cause the release of a turbid fluid, which gets retained in the retro-lenticular space. Upon electrolysis, this fluid has been found to be made of alpha-crystallin and collagen released from the necrotic and/or apoptotic autolysed cells [7, 8].

Eifrig [8] described 3 cases with capsulorhexis-related lacteocrumenasia (lacteo = milky and crumen = small bag or coin purse). The aspirated fluid was examined with electrophoresis and showed a large amount of alpha-crystallin and a small amount of albumin. The study

concluded that it was unlikely to be a result of an antigen-antibody reaction in the capsular bag as there was no gamma globulin detected.

There have been a few reports of late-onset CBS being linked to *Propionibacterium acnes* [9, 10]. Carlson and Koch [11] reported a case of *P. acnes*-associated endophthalmitis after Nd:YAG laser capsulotomy. It is not known whether their case had late-onset CBS. These reports led us to err on the side of caution, and we therefore opted to perform the aspiration of the fluid via the pars plana, rather than using the conventional approach of Nd:YAG laser capsulotomy.

Our case had the unique feature of a very late presentation 8 years after an uncomplicated phacoemulsification and CCC. In addition, in comparison to most of the reported literature where the visual acuity was dramatically reduced, our patient had a BCVA of 20/20 and only had symptoms of misty vision with a reduction in her contrast sensitivity, which improved after the aspiration of the fluid.

In summary, late-onset CBS can present after a long time and may cause significant symptoms. The usual treatment for the condition is Nd:YAG laser capsulotomy, but an infective aetiology could be present and this may cause a dissemination of intra-ocular infection. We have described a pars plana removal technique with simultaneous administration of intra-vitreous antibiotics, which we believe is a safe approach for this condition.

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Fig. 1. **a** Anterior capsular fibrosis. **b** Retro-lenticular space filled with milky fluid. **c** Magnified view of the same.

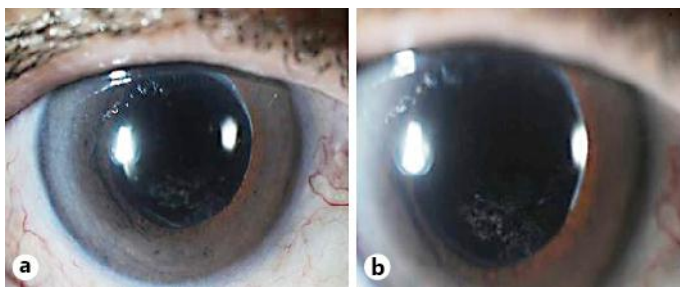


Fig. 2. Post-operative images of the right eye: no sign of milky fluid in the retro-lenticular space (**a**) and some posterior capsular thickening in the inferior capsule (**b**).