

Overhanging glaucoma filtration bleb related to cataract surgery

Haisheng Zheng^{1,2}, Jingjing Huang¹

¹State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Center, Sun Yat-Sen University, Guangzhou 510060, China; ²Hainan Eye Hospital, Zhongshan Ophthalmic Center, Sun Yat-Sen University, Haikou 570311, China

Correspondence to: Jingjing Huang, MD, PhD. Department of Glaucoma, State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Center, Sun Yat-Sen University, 54 Xianlienan Road, Guangzhou 510060, China. Email: hjjing@mail.sysu.edu.cn.

Abstract: A 74-year-old man presented with a three-year history of foreign body sensation in the right eye after cataract surgery. He underwent uneventful trabeculectomy with mitomycin C (MMC) in the right eye seven years ago. Slit-lamp examination revealed a large avascular filtration bleb overhanging on the cornea with a thin base connected to the conjunctiva. Preoperative ultrasound biomicroscopy (UBM) impressions were confirmed by leakage of aqueous from the incision intraoperatively. Surgical dissection and revision of the bleb was performed with satisfactory outcome. Histopathologic evaluation showed proliferation of fibrous tissue under the conjunctival epithelia with irregular cystoids change. The current case may be the first report of a post-trabeculectomy overhanging filtration bleb related to cataract surgery. The possible mechanism may be related to microleakage of the surgical wound after phacoemulsification which initiated the healing and scarring process.

Keywords: Overhanging filtration bleb; trabeculectomy; cataract surgery

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Case presentation

A 74-year-old man presented with a three-year history of foreign body sensation in the right eye after cataract surgery. He underwent uneventful trabeculectomy with mitomycin C (MMC) in the right eye for advanced stage primary open angle glaucoma (POAG) seven years ago, and phacoemulsification with intraocular lens implantation for senile cataract three years ago. From then on, he felt uncomfortable in the right eye with mild vision loss. On examination, his best-corrected visual acuity (BCVA) was 20/40. Intraocular pressure (IOP) was 18 mmHg without glaucoma medications. Slit-lamp examination revealed a large avascular filtration bleb overhanging on the cornea with a thin base connected to the conjunctiva (*Figure 1A,B*). No leakage from the filtration bleb could be detected (*Figure 1C*). Ultrasound biomicroscopy (UBM) confirmed that the bleb was connected to the conjunctiva through a thin base with partial free edge (*Figure 2A*), and the inner path of the filtration bleb was patent (*Figure 2B*).

The patient underwent surgical dissection of the

overhanging bleb and scar tissues on the cornea. Leakage of aqueous could be seen from the base of the bleb. Revision of the bleb using superior conjunctival flap was performed. Histopathologic evaluation showed proliferation of fibrous tissue under the conjunctival epithelia with irregular cystoids change (*Figure 3A,B*).

On the first post-operative day, BCVA was 20/40 and IOP was 15 mmHg. The bleb was flat and diffuse (*Figure 4A*). Six months later, BCVA increased to 20/25, while the IOP was stable and the bleb was functioning well (*Figure 4B,C*).

Discussion

Large overhanging blebs are an uncommon complication of glaucoma filtration surgery. Though the pathogenesis is unknown, it may be related to the use of MMC. Its shape varies, especially after application of MMC (1). In the current case, the occurrence of such bleb appeared to be related to cataract surgery instead, evidenced by the following two signs. First, foreign body sensation and uncomfortable feeling appeared after the cataract surgery.

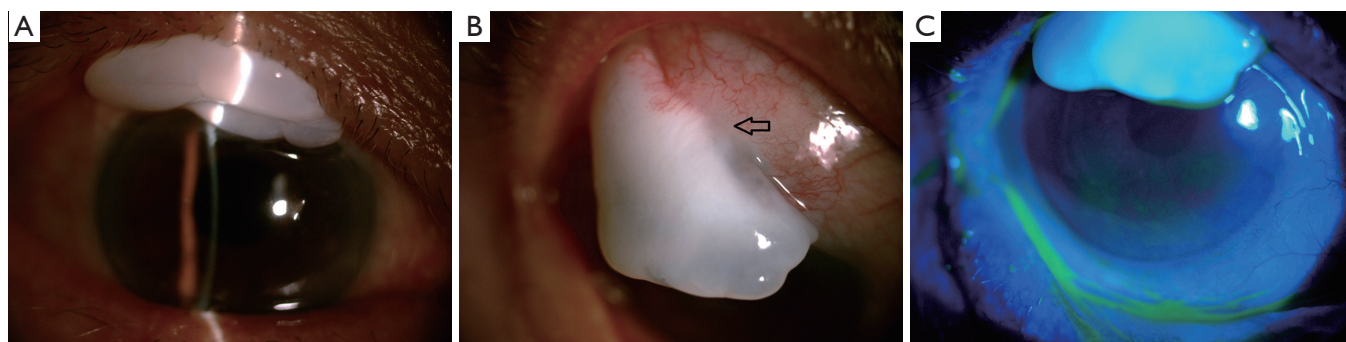


Figure 1 Slit-lamp examination revealed a large avascular filtration bleb overhanging on the cornea (A) with a thin base connected to the conjunctiva (B). No leakage could be seen (C). Black arrow: thin base connected to the conjunctiva.

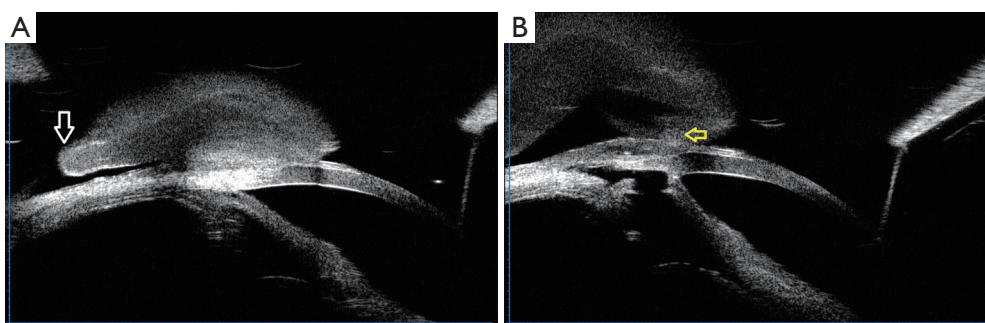


Figure 2 Ultrasound biomicroscopy showed that the bleb was connected to the conjunctiva through a thin base with a partial free edge (A). The inner passage of the filtration bleb was patent (B). White arrow: partial free edge. Yellow arrow: inner passage of the filtration bleb.

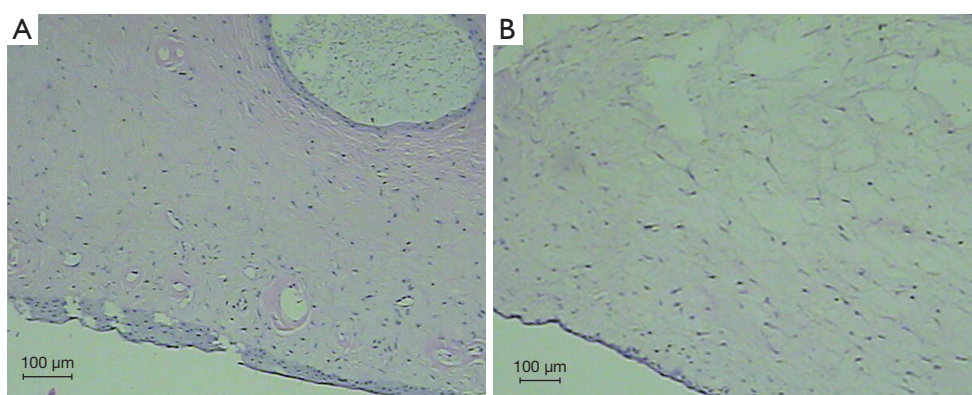


Figure 3 Histopathologic evaluation showed proliferation of fibrous tissue under the conjunctival epithelium (A) with irregular cystoids (B).

Second, for the two-side phacoemulsification on the right eye, the side incision was on the superior peripheral cornea near the filtration bleb, which might be interrelated.

It has been reported that the size of functioning filtration bleb decreased and IOP increased after phacoemulsification (2).

There has also been a report of an inadvertent bleb developing after phacoemulsification (3). However, the current case may be the first report of a post-trabeculectomy overhanging filtration bleb related to cataract surgery. The possible mechanism may be related to microleakage of the

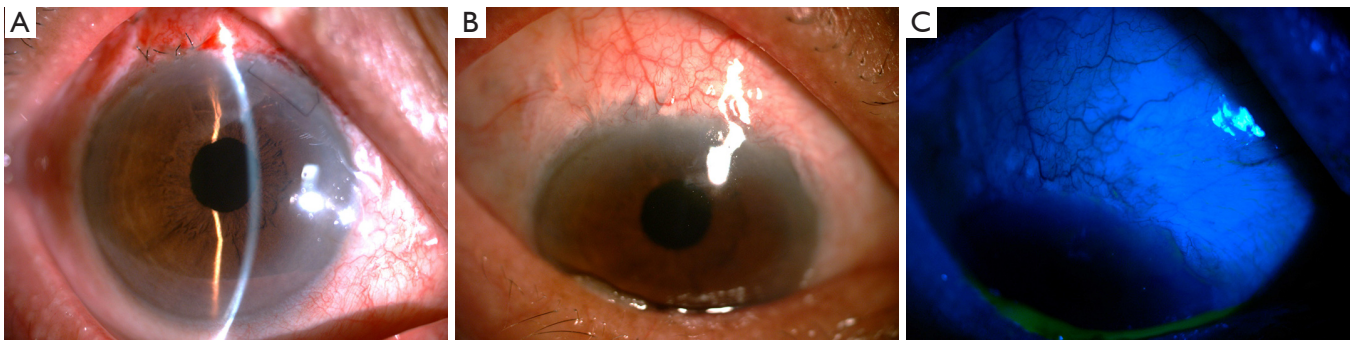


Figure 4 Post-operative slit-lamp examination. The bleb was flat and diffuse on the first post-operative day (A). The bleb was well-maintained six months after surgery (B) without leakage (C).

surgical wound of the side incision after phacoemulsification which initiated the healing and scarring process (3). Thus, the morphology of the bleb is similar to a conjunctival granuloma with a thin base connected to the bleb.

Excision and revision of overhanging blebs are indicated when they are symptomatic or leaking. However, complications such as bleb leakage or failure occurred occasionally (4). Use of indocyanine green during excision or bleb revision guided by anterior segment optical coherence tomography has been reported with good results (5).

Anis *et al.* reported sutureless revision with the aid of corneal contact lenses in six cases of overhanging filtering blebs (4). Success was achieved in five, while one patient had bleb leak requiring suture repair (4). In the current case, preoperative UBM impressions were confirmed by leakage of aqueous from the incision intraoperatively. Therefore, suture revision with superior conjunctival flap was performed with satisfactory outcome.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Informed Consent: Written informed consent was obtained from the patient for publication of this manuscript and any accompanying images.

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