



AVASCULAR OVERHANGING BLEB REDUCTION WITH MODIFIED SUTURELESS TECHNIQUE

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SUMMARY – A late postoperative trabeculectomy complication could be the overhanging bleb, especially when antimetabolites are used. It can be associated with hypotony, foreign body sensation, dellen, and visual compromise. We report a case of an avascular overhanging bleb successfully reduced with a modified sutureless technique. Nine years before, our patient had trabeculectomy using mitomycin C. After the surgery, the intraocular pressure was correct, without progression in the visual field, but on slit-lamp examination, a large avascular overhanging bleb was noted. Partial excision was performed with dissection from the cornea, overhanging conjunctival trimming, leakage checking and Bandage Contact lens placement. Topical antibiotic and steroid treatment was administered for three weeks. The excised conjunctival histopathology showed avascular metaplastic epithelium. Six months after the surgery, the patient's visual acuity improved, with intraocular pressure of 12 mm Hg and a Seidel negative asymptomatic bleb. In conclusion, this less invasive technique preserves better bleb function without ripping the surrounding ischemic tissue. The procedure is safe and easy to perform, with less surgical time and fast recovery.

Key words: Trabeculectomy; Overhanging bleb, avascular; Modified sutureless technique

Introduction

The main goal of glaucoma surgery is to relieve intraocular pressure for a long term. Trabeculectomy is the most common filtering procedure, the success of which lies not only on the surgical technique but also on the intraoperative and postoperative measures to modulate wound healing. Even though the surgery works, over years the bleb can change, and complications appear. A late and rare postoperative complication is the overhanging bleb, especially when

antimetabolites are used¹. It can be associated with hypotony due to overfiltration or external leakage, foreign body sensation due to an extremely large bleb, dysesthesia due to interference with lid function, and closure leading to corneal drying with dellen formation, unacceptable cosmesis, and visual compromise due to astigmatism². We report a case of an avascular overhanging bleb successfully reduced with a modified sutureless technique.

Case Report

A 74-year-old woman was referred to our clinic with persistent discomfort and visual acuity loss on her right eye over a period of 3 months. The subject's medical history presented hypertension and diabetes mellitus type 2 with pharmacological treatment. Her ocular

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history revealed cataract surgery and trabeculectomy using mitomycin C (2 mg/mL for 2 minutes) in both eyes 9 years before. After the surgery, the intraocular pressure (IOP) was correct, without progression in the visual field. She also underwent ptosis surgery on her right eye 4 years before. The right eye examination showed the best corrected visual acuity (BCVA) 20/50, while slit-lamp examination revealed a large avascular overhanging bleb (Fig. 1A-B). Her IOP was 10 mm Hg with stable cupping and visual field.

Due to the decreased vision and symptomatology but IOP well controlled, the patient underwent bleb reduction. Partial excision was performed as follows (Fig. 2): 1) blunt dissection from the cornea using an iris spatula until reaching the limbus with minimal tissue resistance; 2) corneal overhanging conjunctival

trimming using Vannas scissors; 3) leakage checking showing slow flow; and 4) placement of a 22-mm diameter Bandage Contact lens (BCL). The BCL was left for three weeks and treatment with topical moxifloxacin and steroids was administered and then tapered (Fig. 1C). The excised conjunctival histopathology showed an avascular metaplastic epithelium with an increased number of fibroblasts (Fig. 3). Six months after the surgery, the patient's BCVA was 20/25 with IOP of 12 mm Hg and a Seidel negative asymptomatic bleb (Fig. 1D).

Discussion

The pathogenesis of overhanging bleb is not well understood, but the most common relationship is the use of antimetabolites during surgery; these blebs are

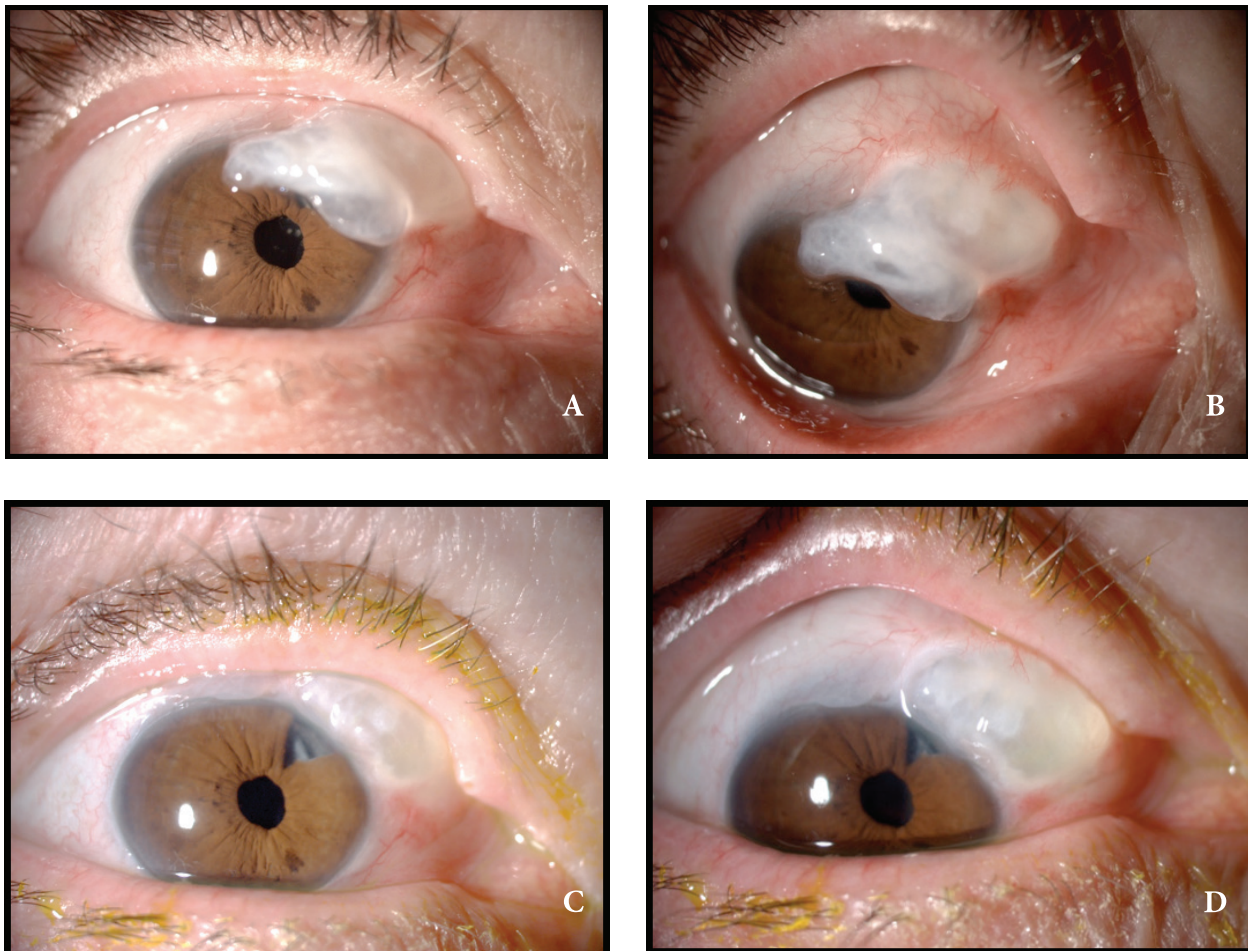


Fig. 1. Bleb biomicroscopic appearance: overhanging avascular bleb at the time of presentation: (A) external appearance; (B) with the patient looking down; (C) three weeks postoperatively still with the Bandage Contact lens; (D) six months after the surgery.

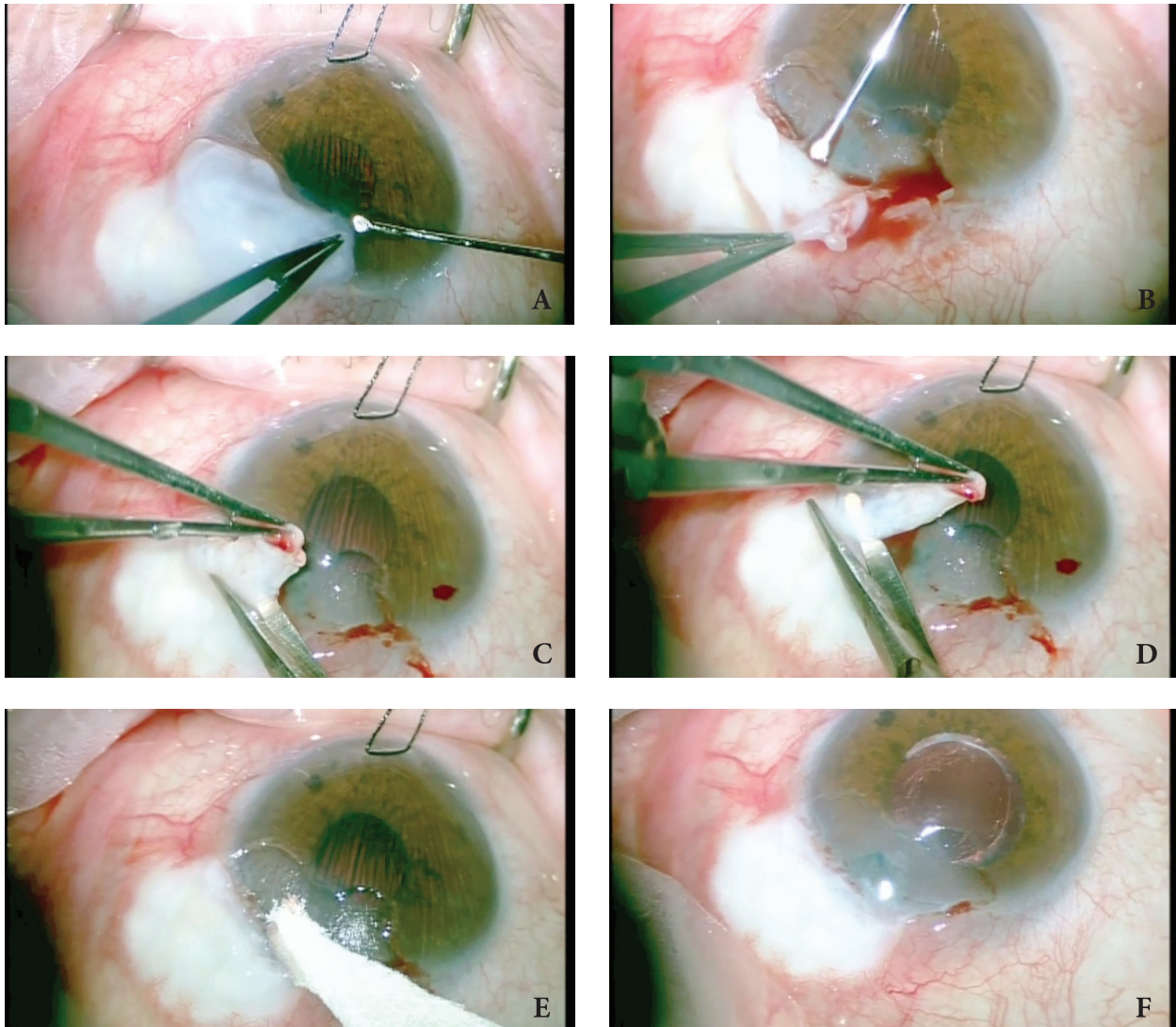


Fig. 2. Surgical technique: (A) and (B) blunt dissection with an iris spatula until reaching the limbus; (C) and (D) corneal overhanging conjunctival trimming with scissors; (E) final result; (F) placement of a 22-mm Bandage Contact Lens.

often extremely thin and cystic, with friable conjunctiva. It has been suggested to be related to unguarded 'full-thickness' filtration procedures and may be produced by the effect of continuous lid movement. Symptomatic large overhanging blebs frequently need surgical correction. When the remaining tissues are healthy, partial reduction techniques show very good results^{3,4}. However, in cases of coexisting very thin ischemic tissues in which there is the risk of leaking with manipulation or suturing, surgical approach can be more difficult⁵. Avascular blebs are often treated with complete bleb excision although this can compromise their function leading to hypertension⁶.

In our patient, a symptomatic both avascular and overhanging bleb was noted. Since the IOP was correct without any previous leaking or blebitis episodes, we decided for a more conservative approach performing a sutureless partial excision technique. Blunt dissection of the corneal portion of the bleb with an iris spatula was performed as described by Lanzl *et al.*³ but including large-diameter BCL placement at the end of the procedure as recommended by Anis *et al.*⁴.

In conclusion, this less invasive technique is a good alternative for these patients because it is able to better preserve bleb function without ripping the surrounding

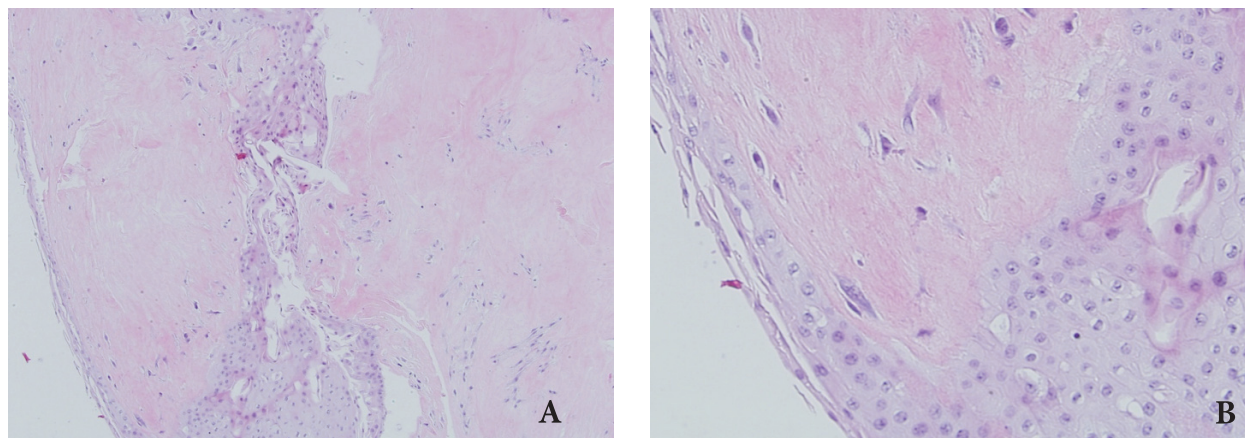


Fig. 3. Histopathology of the excised conjunctiva confirming the avascular clinical appearance: metaplastic epithelium with increased fibroblasts and absence of vessels.

ischemic tissue. The procedure is easy to perform, safe, with less surgical time and recovery. However, avascular tissue persists with potential complications.

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Sažetak

KOREKCIJA AVASKULARNOG FILTRACIJSKOG JASTUČIĆA MODIFICIRANOM TEHNIKOM BEZ ŠAVOVA

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Jedna od rijetkih kasnih poslijeoperacijskih komplikacija trabekulektomije može biti izrazito velik i cistično promijenjen filtracijski jastučić, pogotovo kada se primjenjuju antimetaboliti. To može biti povezano s hipotonijom, stanjenjem rožnice te osjećajem stranog tijela i smetnjama vida. Prikazujemo slučaj avaskularnog filtracijskog jastučića koji je operiran modificiranom tehnikom bez šavova. Prije devet godina bolesnici je učinjena trabekulektomija s mitomicinom C. Nakon operacije intraokularni tlak je bio zadovoljavajućih vrijednosti, bez progresije u vidnom polju, ali je na biomikroskopskom pregledu zabilježen veliki avaskularni filtracijski jastučić. Učinjena je parcijalna ekscizija jastučića s površine rožnice te podrezivanje konjunktivnog dijela, nakon čega je postavljena terapijska kontaktna leća. Topički tretman antibiotikom i steroidima bio je primijenjen tijekom tri tjedna. Patohistološki nalaz odstranjenog dijela spojnice pokazao je avaskularni metaplastični epitel. Šest mjeseci nakon operacije došlo je do poboljšanja vidne oštine. Vrijednost intraokularnog tlaka bila je 12 mm Hg uz avaskularni, Seidel negativan i asimptomatski filtracijski jastučić. U zaključku, ova minimalno invazivna kirurška tehnika korekcije filtracijskog jastučića sigurna je i jednostavna metoda koja skraćuje operativno vrijeme i oporavak bolesnika. Isto tako, minimalno je traumatična tehnika za okolno tkivo kao i sam filtracijski jastučić, što je od velikog značenja u očuvanju njegove funkcije odnosno regulaciji intraokularnog tlaka.

Ključne riječi: *Trabekulektomija; Filtracijski jastučić, avaskularni; Tehnika bez šavova, modificirana*