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Short communication

Repair of a leaking bleb filtration with conjunctival and amniotic membrane transplantation[☆]

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ABSTRACT

Clinical case: A 71-year-old woman presented with a leaking bleb after a combined phacotrabeculectomy performed 13 years ago. To construct a new filtering bleb, the necrotic area was fully excised. The amniotic membrane was inserted over the scleral flap underneath healthy conjunctiva edges. A conjunctiva-Tenon autograft from the contralateral eye was sutured and was sealed with fibrin adhesive.

Discussion: We propose a new surgical technique to repair late leak failures after trabeculectomy with mitomycin C in blebs with a large avascular area. Transplantation of amniotic membrane and conjunctival autograft may be used to repair late leak failures with inadequate conjunctiva to advance.

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Reparación de ampolla filtrante postrabeculectomía con injerto de conjuntiva y membrana amniótica

RESUMEN

Caso clínico: Mujer de 71 años que presenta punto de fuga en la ampolla de una facotrabeculectomía realizada 13 años antes. Se reseca área necrótica y se sutura trasplante de membrana amniótica sobre el tapete escleral hiperfiltrante. Sobre esta se sutura injerto de conjuntiva y Tenon del ojo contralateral.

Discusión: Se propone nueva técnica quirúrgica para el tratamiento de fístula de filtración tardía tras trabeculectomía con mitomicina C y área avascular extensa. Se aplica adhesivo de fibrina para el sellado de incisiones. El doble trasplante de membrana amniótica y conjuntiva contralateral puede utilizarse para reparar puntos de fuga tardíos postrabeculectomía con conjuntiva insuficiente.

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Palabras clave:

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Introduction

In trabeculectomies performed with mitomycin C it is not rare to encounter delayed leak points.¹ The cause seems to lie in an aberrant regeneration of the filtration bleb with attenuated conjunctival epithelium and a relaxed and acellular stroma. The fibroblasts affected by mitomycin C are too reduced or injured to produce a consistent collagen tissue capable of closing the filtration bleb.²

It is necessary to seal the leak of aqueous humor to avoid the loss of visual acuity (VA). The permanent leak of aqueous humor gives rise to severe complications such as chronic hypotony, athalamia, corneal decompensation, hypotonic maculopathy or endophthalmitis due to direct approach of germs from the fistula.³

Surgical technique

Female, 71, with advanced chronic glaucoma in both eyes is considered a subject. In 1994 she underwent combined cataract and trabeculectomy surgery in her left eye with mitomycin C (0.5 mg/ml 5 min).

In 2007, the patient visited the emergency section exhibiting delayed leak points in the filtration bleb. It was attempted to stop the leak with autologous blood in the filtration bleb with no success. The patient VA was of light perception in the right eye (RE) and 0.1 in the left eye (LE). The biomicroscopy assessment of the LE revealed a flat, avascular filtration bleb covered by necrotic conjunctiva with blood clot inside and

leak point at 3–4 mm of the limbus with Seydel (+). Intraocular pressure was 20 mmHg in RE and 6 mmHg in LE.

With a large avascular bleb and a leak point on its surface, it was decided to extract the damaged tissue and replace it with healthy conjunctival tissue from the other eye. The dual layer technique performed was as follows:

- (1) Resection of the 8 mm × 8 mm necrotic bleb (Fig. 1).
- (2) Implant of amniotic membrane (AM) to cover the scleral trabeculectomy flap (1st layer), with 4 points of polyglactin 8-0 and stitching to the sclera.
- (3) A nasal conjunctiva transplant measuring 8 mm × 8 mm was taken from the right eye.
- (4) The conjunctival transplant (2nd layer) was placed over the AM and sutured to healthy bulbar conjunctiva with 5 polyglactin 8-0 stitches.
- (5) Fibrin adhesive layer was applied (Tissucol DUO, Baxter SL, Valencia, Spain) sealing the edges of the incisions (Fig. 2).

Treatment was initiated with tobramycin and dexamethasone eyedrops (Tobradex eyedrops, Alcón Cusí SA, El Masnou, Barcelona, Spain) in descending pattern over 8 weeks. In the first 2 weeks the bleb exhibited low vascularization and therefore 20% autologous serum was added and maintained for 3 months. The bleb vascularization and congestion peaked at day 15 and gradually went down (Fig. 3).

After 3 years of follow-up, the patient exhibited a good filtration bleb (Fig. 4). The intraocular pressure of the left eye oscillated in the range of 16–18 mmHg in treatment with 0.5% timolol eyedrops (Timofтол 0.5%, MSD Spain SA, Madrid, Spain) and the VA remained constant at 0.3 despite a papillary cup of 9–10/10.

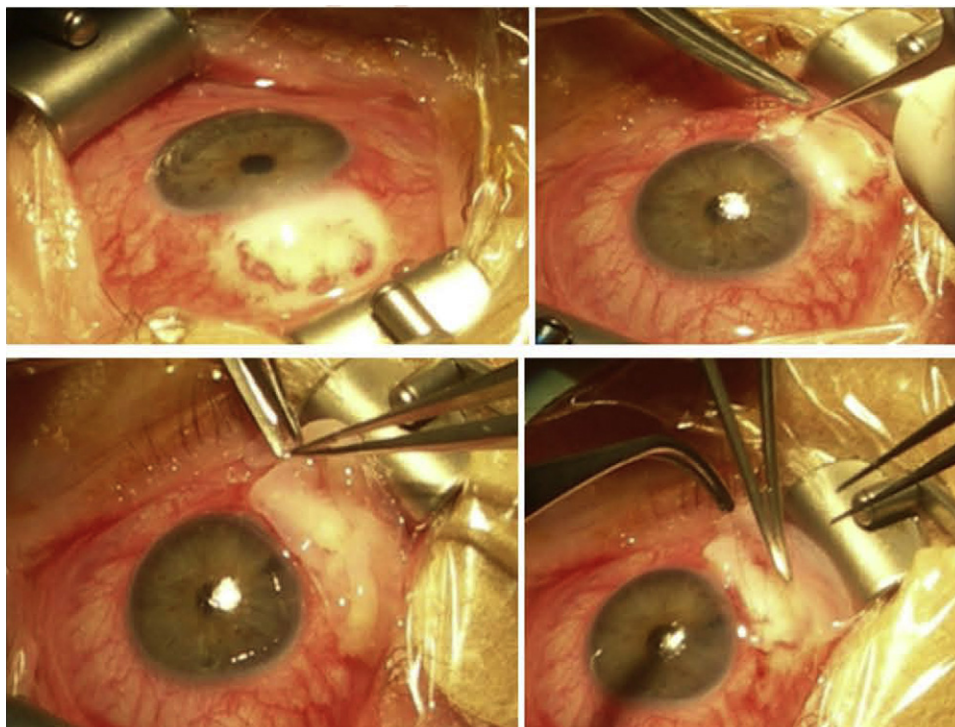


Fig. 1 – Large post-trabeculectomy necrotic and filtrating bleb, exhibiting injected autologous blood. Conjunctival necrotic tissue resection. Amniotic membrane transplants and stitching (1st layer).

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