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SHORT COMMUNICATION

Amniotic membrane transplantation associated with conjunctival peritomy in the management of Mooren's ulcer: A case report

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PURPOSE. *To report the association of conjunctival peritomy with amniotic membrane transplantation (AMT) at the limbus with the exclusion of the central cornea in order to preserve visual function in one case of bilateral Mooren's ulcer.*
METHODS. *A 36-year-old man with bilateral Mooren's ulcer was unresponsive to conventional therapy. Surgical procedure was performed on his right eye, at impending risk of corneal perforation. A 20 x 20 mm piece of amniotic membrane (AM) was prepared by performing a central hole of 7.5 mm diameter with a manual trephine. A 360° conjunctival peritomy was performed and the AM was placed with the epithelium side facing up and the central hole was sutured on the paracentral cornea.*
RESULTS. *Two weeks after surgery, while the right eye showed improvement of signs and symptoms and unchanged best-corrected visual acuity (BCVA), the left eye showed a peripheral corneal perforation with prolapsed iris that required conjunctival flap. At 7 months of follow-up, the right eye showed no ocular inflammation, a reduction of the lipid-like peripheral corneal infiltrates, an increased stromal thickness, and an unchanged BCVA. The progression of corneal thinning in the left eye led the authors to perform AMT (as described) in the left eye as well. Five months after the AMT in the left eye, neither eye shows signs of disease progression, and neither requires further therapy.*
CONCLUSIONS. *Conjunctival peritomy associated with AMT may be an alternative surgical approach in the management of Mooren's ulcers to control the inflammation and the progression of disease. (Eur J Ophthalmol 2005; 15: 274-6)*

KEY WORDS. *Mooren's ulcer, Amniotic membrane, Amniotic Pumembrane transplantation, Conjunctival peritomy, Surgical treatment*

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INTRODUCTION

Mooren's ulcer is an immune, inflammatory disorder characterized by peripheral corneal ulceration and thinning (1). The treatment of Mooren's ulcer is based on topical steroids, while conjunctival excision, systemic immunosuppression, or keratoplasty have been suggested for unresponsive cases (2-5). Recently, amniotic membrane transplantation (AMT) has been successfully used to manage corneal ulcers and perforations (6-9). However, standard AMT causes a transient decrease of visual acuity. We describe a case of severe Mooren's ulcer with bilateral involvement, at impeding risk of corneal perforation. We performed, in the worse eye, conjunctival peritomy associated with AMT at the limbus with the exclusion of the central cornea in order to preserve

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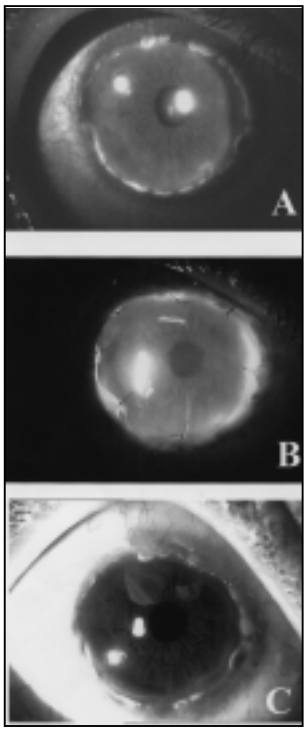

Fig. 1 - *The right eye presented ocular inflammation with peripheral corneal thinning, neovascularization, and yellow, lipid-like stromal infiltrates* **(A)**. *The amniotic membrane was sutured at the paracentral cornea and fitted under the dissected conjunctiva* **(B)**. *At 12-month follow-up, the right eye showed no ocular inflammation and decreased corneal peripheral thinning and infiltrates* **(C)**.

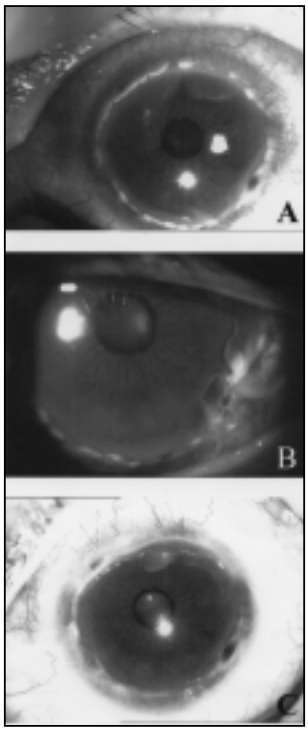

Fig. 2 - *The left eye presented ocular inflammation with peripheral corneal thinning, neovascularization, and yellow, lipid-like stromal infiltrates (***A)**. *Two weeks after amniotic membrane transplantation (AMT) in the right eye, the left eye developed a small peripheral perforation with iris herniation* **(B)**. *Five months after conjunctival peritomy and AMT the left eye showed improvement of signs and symptoms* **(C)**.

visual function. The different clinical course of the treated and the untreated eye is described.

Case report

A 36-year-old Asian man with Mooren's ulcer came to our observation in May 2000 complaining of severe bilateral conjunctival hyperemia and ocular pain worsening over the last 5 years. The patient reported no history of systemic diseases, corneal trauma, ocular surgery, or infections. Best-corrected visual acuity (BCVA) was 20/20 in both eyes. Severe conjunctival hyperemia, 360° peripheral corneal thinning with a steep, infiltrated leading edge associated with neovascularization, and lipid-like stromal infiltrates were observed in both eyes. The central cornea was not involved and the corneal epithelium did not stain with fluorescein (Figs. 1A and 2A). HCV RNA resulted positive, while all hematologic routine tests were normal and markers of immune disease were negative. Topical steroids induced a temporary improvement of symptoms and signs in both eyes. During the subsequent 3-year follow-up the patient showed five relapses of ocular inflammation treated with a brief course of topical and oral steroids. However, the peripheral corneal thinning and lipid-like infiltrates increased, with his right eye at risk of corneal perforation. BCVA decreased to 20/25 in the right eye and was unchanged in the left eye.

In April 2003 we performed a 360° conjunctival peritomy and amniotic membrane transplantation at the limbus in the right eye sparing the central cornea in order to preserve visual acuity. A 20 x 20 mm piece of amniotic membrane (AM) was prepared by performing a central hole of 7.5 mm diameter with a manual trephine. A 360° conjunctival peritomy was performed and the AM was placed on the prepared corneoscleral surface with the epithelium side facing up. The AM was fitted under the dissected conjunctiva. The central hole was sutured on the paracentral cornea by interrupted 10-0 nylon sutures (Fig. 1B), while the conjunctiva was sutured with 8-0 Vicryl sutures. A bandage contact lens was applied for 3 days and antibiotic and steroidal eyedrops were given three times a day for 2 weeks. The day after surgery, the BCVA of the right eye was unchanged. At each control visit, exposed sutures were removed until, after 2 weeks, all corneal and conjunctival sutures had been removed. At this time, the amniotic membrane was integrated in the corneal stroma

and the right eye showed improvement of signs and symptoms. On the other hand, the left eye showed a peripheral corneal perforation with prolapsed iris that required conjunctival flap (Fig. 2B). Seven months after surgery, the right eye showed no ocular inflammation, a reduction of the lipid-like peripheral corneal infiltrates, an increased stromal thickness, and an unchanged BCVA. At this time, the transplanted amniotic membrane was still visible. Amniotic membrane transplantation, as previously described, was also performed in the left eye, in which the corneal thinning was progressing notwithstanding steroids. No relapses of ocular inflammation were observed after 12 months and 5 months of follow-up in the right and left eye, respectively (Figs. 1C and 2C).

DISCUSSION

The patient showed a severe form of Mooren's ulcer, with impending corneal perforation but preserved visual acuity. The therapeutic goal in Mooren's ulcer is to control the inflammatory reaction and to consequently reduce corneal thinning, ulceration, and risk of perforation. In case of failure of medical treatment, conjunctival excision may be performed, but recurrences are frequent (10).

AMT has been shown to promote ocular surface healing and suppress inflammation (6), and this procedure was recently and successfully used in three cases of severe Mooren's ulcer (7-9).

We decided to combine conjunctival peritomy with AMT at the limbus, with sparing of the visual axis by performing a central hole in the AM. This technique allowed us to control ocular inflammation and to preserve visual acuity for at least 12 months, without resorting to additional medical therapies.

Further, extended studies are required to confirm the efficacy of AMT with conjunctival peritomy in the management of severe Mooren's ulcers, unresponsive to medical treatment, but with good residual visual acuity.

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