

## SHORT COMMUNICATION

# Superficial keratectomy and amniotic membrane patch in the treatment of corneal plaque of vernal keratoconjunctivitis

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**PURPOSE.** *To report the importance of early surgical treatment of corneal ulcers associated with vernal keratoconjunctivitis (VKC) which may potentially produce severe lesions and permanent visual sequelae.*

**METHODS.** *The authors present the case of a child with corneal ulcer in plaque who did not respond to medical treatment and had a good response to surgical treatment.*

**RESULTS.** *A superficial keratectomy with an amniotic membrane patch was performed. A rapid postoperative epithelialization with a final good visual acuity was achieved.*

**CONCLUSIONS.** *Although amniotic membrane grafts following keratectomy have been described as a successful treatment in deep ulcers, in cases with slight stromal thinning, the amniotic membrane patch may be enough to achieve epithelialization. This procedure avoids the presence of the remains of membrane under the epithelium, which may affect postoperative corneal transparency. (Eur J Ophthalmol 2008; 18: 131-3)*

**KEY WORDS.** *Amniotic membrane patch, Corneal plaque, Corneal ulcers, Vernal keratoconjunctivitis*

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## INTRODUCTION

Corneal ulcers associated with vernal keratoconjunctivitis (VKC) are potentially severe lesions which may lead to permanent sequelae. They normally present as oval, superficial, localized lesions in the upper zone of the cornea, which usually respond to medical therapy.

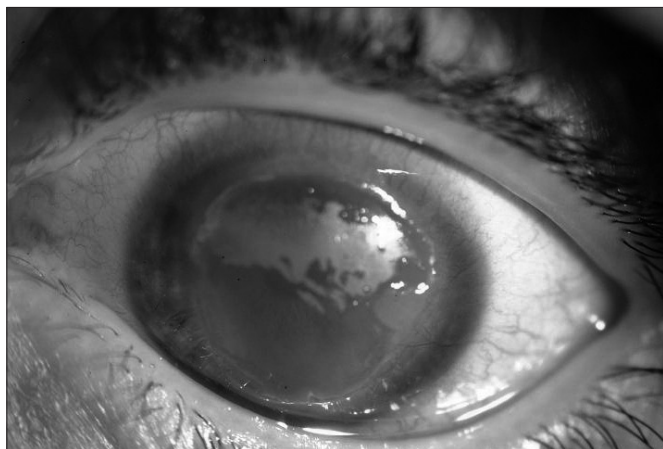
Albeit infrequent, these ulcers may develop a plaque of inflammatory tissue in their base. In these cases, conservative treatment may not be sufficient and a surgical approach should be considered.

## Case report

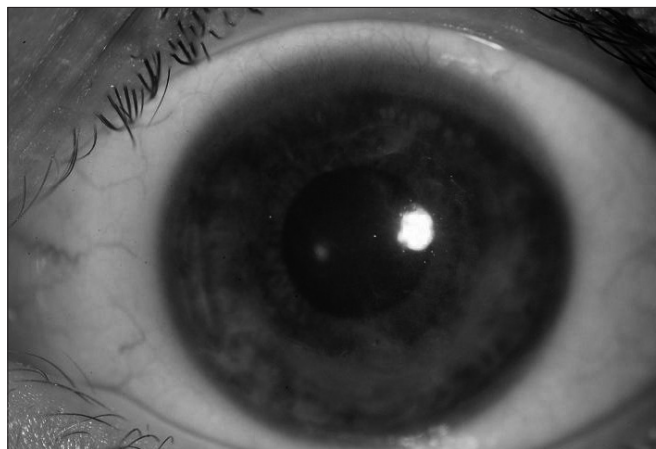
We describe a 9-year-old boy with a history of asthma and atopy diagnosed as VKC at the age of 4. The patient

presented a corneal ulcer in the left eye of 1 month of evolution which did not respond to medical treatment with antihistamines and topical corticosteroids. On examination, visual acuity in the right eye was 20/25, and 20/200 in the left. Ocular pressure was 12 mmHg in both eyes and biomicroscopic examination showed a corneal ulcer of 8 mm in diameter with raised edges and deep stromal vascularization in 360° (Fig. 1). The base of the ulcer presented calcium-like deposits which impeded epithelialization of the lesion.

On lack of response to medical treatment superficial keratectomy was performed. After epithelial removal of the edges, the corneal plaque was scraped with a blunt spatula, showing slight stromal thinning underneath. To favor postoperative epithelialization, an amniotic membrane patch (downward basal membrane) was fixed to the pe-



**Fig. 1** - Corneal ulcer 8 mm in diameter with raised edges, calcium-like deposits, and deep stromal vascularization in 360° before surgery.



**Fig. 2** - Thirty months after surgery, cornea shows leukomas and partial regression of neovascularization.

ripheral cornea with a continuous nylon 10/0 suture. To prevent early detachment of the membrane, the superior and inferior palpebral margins were temporally closed with one 4/0 silk suture at the end of surgery. During the postoperative period, the patient was treated with topical dexamethasone-tobramycin at decreasing doses during the first month. The amniotic membrane was withdrawn after 2 weeks, demonstrating complete epithelialization of the cornea (Fig. 2).

## DISCUSSION

Corneal ulcers associated with VKC have been classified into three grades (1). Grade 1 ulcers have a transparent base, grade 2 ulcers present visible inflammatory deposits on the ulcer base, and grade 3 ulcers present with an elevated plaque above the level of the surrounding epithelium. The latter group usually presents an accumulation of inflammatory deposits composed of granulation material and eosinophils in the stromal bed which may impede corneal epithelialization (2). Consequently, this plaque does not resolve spontaneously even with topical adjuvant treatment, and thus a delay in surgical treatment may lead to the appearance of complications such as amblyopia, strabismus, infectious keratitis, corneal neovascularization, or even perforation (1).

Patients with VKC and the presence of corneal plaques or grade 3 ulcers such as the patient described herein

should receive early surgical treatment to avoid potential sequelae (1, 3). Superficial keratectomy and an amniotic membrane graft are reportedly an effective procedure (4). However, the use of an amniotic membrane as a graft may be associated with membrane remains under the epithelium for weeks or months after epithelialization, with the consequent stromal opacity (5) and possible amblyopia.

In cases with slight stromal thinning, the amniotic membrane as a patch may be sufficient to achieve epithelialization (6) without the presence of subepithelial opacities.

*Proprietary interest. None.*

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## REFERENCES

1. Cameron JA. Shield ulcers and plaques of the cornea in vernal keratoconjunctivitis. *Ophthalmology* 1995; 102: 985-93.
2. Solomon A, Zamir E, Levartovsky S, Frucht-Pery J. Surgical management of corneal plaques in vernal keratoconjunctivitis: a clinicopathologic study. *Cornea* 2004; 23: 608-12.
3. Zeynep O, Ahmet Z, Christopher J. Rapid healing of vernal shield ulcer after surgical debridement. A case report. *Cornea* 2006; 25: 472-3.
4. Sridhar MS, Sangwan V, Bansal A, Rao GN. Amniotic membrane transplantation in the management of shield ulcers of vernal keratoconjunctivitis. *Ophthalmology* 2001; 108: 1218-22.
5. Gris O, Wolley-Dod C, Guell JL, Tresserra F, Lerma E, Corcostegui B. Histologic findings after amniotic membrane graft in the human cornea. *Ophthalmology* 2002; 109: 508-12.
6. Gris O, del Campo Z, Wolley-Dod C, Güell JL, Bruix A, Calatayud M. Amniotic membrane implantation as a therapeutic contact lens for the treatment of epithelial disorders. *Cornea* 2002; 21: 22-7.