



Case report

Resorbable and running suture for stable fixation of amniotic membrane multilayers: A useful modification in deep or perforating sterile corneal ulcers



Constantin E. Uhlig*, Viktoria C. Müller

Department of Ophthalmology, University Medical Center Muenster, 48149 Muenster, Germany

ARTICLE INFO

Keywords:

Amniotic membrane transplantation
Corneal ulcer
Corneal perforation
Multilayer
Keratoplasty

ABSTRACT

Purpose: To present a modified technique for secure tightening and fixing of multilayer amniotic membranes in deep or perforating corneal ulcers.

Observations: The modified procedure for application and fixation of multilayer amniotic membranes is retrospectively described step by step, and the results of three patients treated with this technique were retrospectively analysed and presented.

The modification consists basically in fixing the inlays with one mini-overlay that is sutured intracorneally with resorbable and running Vicryl 10.0, before a corneoscleral overlay is fixed on top conjunctivally with a running nylon 10.0 suture. The resorbable Vicryl suture is left in place permanently.

Conclusions and Importance: The method described avoids any risk of destroying or displacing the inlays by removing sutures later. In each of the three patients demonstrated as case reports the cornea remained stable throughout the 3- to 5-month follow-up period. This modified technique represents a very useful auxiliary means of treating deep or perforating non-infectious corneal ulcers.

1. Introduction

Various methods have been described for multilayer amniotic membrane (AM) transplantation to treat neurotrophic corneal ulcers or perforations^{1–9}: with or without glue, and with running or interrupted sutures.^{10–12} Apart from Hick et al.⁴ and Rodriguez-Ares and co-workers,⁵ who used running sutures, to our knowledge clinicians have generally preferred interrupted sutures, and all authors have used non-resorbable suture materials to fixate the inlays with a superficial AM layer to the cornea. However, subsequent removal of non-resorbable sutures particularly if interrupted sutures have been used, may destroy the new corneal epithelium and displace correctly positioned AM (Fig. 1). Moreover, if interrupted sutures have been used, specifically in corneal perforation, fluids may pass through the AM even if the sutures are tightly fixed. This may separate the layers and prevent closure and proper wound healing. Furthermore, interrupted sutures may induce discomfort when an additionally used contact lens is lost.

To counter these problems, we modified our transplantation method by using resorbable and running sutures to fixate the inlays with the most superficial corneal membrane layer.

2. Material and methods

The modified procedure for application and fixation of multilayer amniotic membranes is described step by step, and the results of three patients treated with this technique are retrospectively analysed with slit lamp photography and ocular coherence tomography and presented. Informed written consent for the research was obtained from all three patients. Ethics approval was not necessary.

3. Results

3.1. Case 1

A 91-year-old man presented with a sterile perforating corneal ulcer (diameter 4 mm) in his right eye (RE) (Fig. 2f). With the patient under general anaesthesia, the epithelium was scraped (Fig. 2a) and two inlays (diameter 3mm and 4mm), acquired and processed as previously described,⁶ were placed into the corneal ulcer (Fig. 2b) and then covered by a superficial AM (diameter 6mm) that was fixed to the cornea with one running, resorbable suture (Vicryl10.0; Ethicon, Norderstedt, Germany) (Fig. 2c). From that time onward, the anterior chamber

* Corresponding author. Universitätsklinikum Münster, Klinik für Augenheilkunde, Albert-Schweitzer-Campus 1, Gebäude D15, 48149 Münster, Germany.
E-mail addresses: uhlig@uni-muenster.de (C.E. Uhlig), Viktoria.Mueller@ukmuenster.de (V.C. Müller).

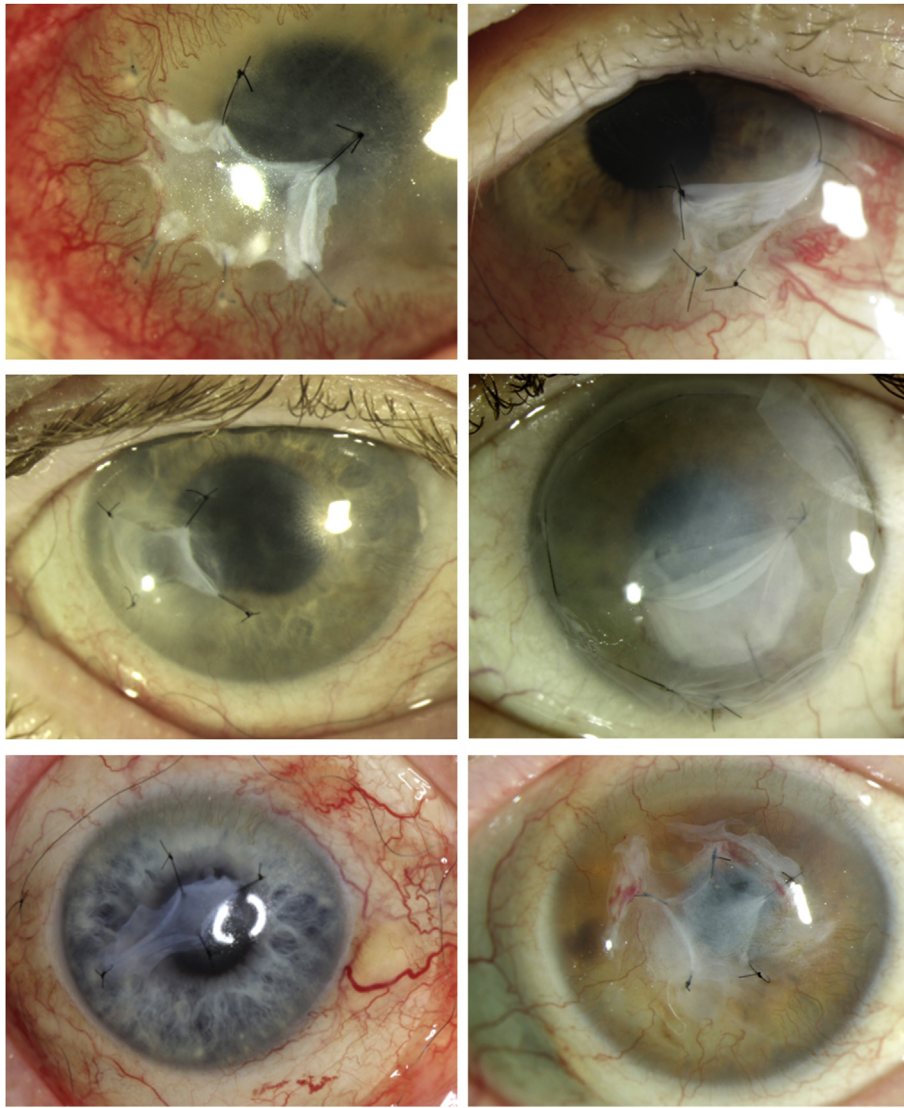


Fig. 1. Slit lamp photography following single suture multilayer amniotic membrane transplantations in six of our patients who suffered from sterile corneal ulcers, demonstrating unwanted retractions of the superficial multilayers. Microsurgical procedures were comparable to the above mentioned modification technique, except that the most superficial corneal layers were single sutured with nonresorbable Nylon 10.0.

remained stable. Additionally, an AM (21 mm in diameter) was positioned as a corneoscleral overlay over the complete cornea and conjunctivally fixated with non-resorbable running nylon 10.0 (Alcon, Freiburg im Breisgau, Germany) (Fig. 2d and e) to support proliferation of the corneal epithelium.^{1,3,10} Finally, a contact lens (diameter 18 mm; Wuk Vision, Au bei Freiburg, Germany) was applied (Fig. 2g) as described elsewhere^{2, 6, 7}, and ofloxacin eye drops were administered three times a day. Two weeks later, the nylon suture and the most superficial AM were removed but the resorbable subepithelial suture was left in place. Eight weeks later, corneal epithelialisation was complete and stable (Fig. 2h and i).

3.2. Case 2

A 64-year-old man presented with a sterile non-perforating marginal corneal ulcer with descemetocoele (diameter 1–2 mm) in his RE (Fig. 3a, c). Analogous to the aforementioned method, five inlays, two of them doubled, were used, and one AM (diameter 11 mm) was sutured on top with running Vicryl 10.0, partially to the episclera while the conjunctiva was lifted temporarily for this purpose. An overlay (diameter 21 mm) was conjunctivally fixed with running nylon 10.0, a

contact lens applied, and ofloxacin eye drops administered. Four weeks later, the nylon suture and the superficial AM were removed but the resorbable suture was left in place. Epithelialisation was complete. At 6 weeks (Fig. 3b, d) and 3 months, the corneal surface was macroscopically stable.

3.3. Case 3

An 85-year-old woman presented with a large non-perforating corneal ulcer (diameter 6mm) in her left eye (LE) (Fig. 3e, g). One inlay (diameter 6 mm) was applied, and an AM (diameter 9 mm) sutured on top with running Vicryl 10.0. An overlay (diameter 21 mm) was conjunctivally fixed with running nylon 10.0, a contact lens applied, and ofloxacin eye drops administered. Four weeks later, the nylon suture and the superficial AM were removed but the resorbable suture was left in place. The subepithelial layers soon appeared smoothly attached on optical coherence tomography (OCT), but remained stable. At 5 months, the ocular surface presented a regular epithelium (Fig. 3f, h).

Download English Version:

<https://daneshyari.com/en/article/8791082>

Download Persian Version:

<https://daneshyari.com/article/8791082>

[Daneshyari.com](https://daneshyari.com)