

## Spontaneous Corneal Perforation

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**Citation:** Ucar F, Cetinkaya S. Spontaneous Corneal Perforation. Electron J Gen Med. 2020;17(5):em241. <https://doi.org/10.29333/ejgm/7992>

### ARTICLE INFO

Received: 19 Mar. 2020

Accepted: 10 Apr. 2020

### ABSTRACT

A male patient, 59 years of age, who had undergone a pterygium operation 45 days ago in another center, applied to our clinics for itching and burning complaints. The patient was examined and thinning of the cornea at the perilimbal region and intense hyperemia, inflammation and scarred tissue in the nasal conjunctiva were observed. Additionally, the patient had chronic dacryocystitis. Firstly, an external dacryocystorhinostomy (DSR) operation was applied. Three days after the operation, corneal perforation and iris prolapse occurred. An autograft, including conjunctiva, limbus and neighbouring corneal tissue with lamellar excision from the superior region of the same eye, was taken. With the help of 10/0 monofilament nylon sutures, the autograft was implanted. In the postoperative period, the patient's cataract, which was present before the operation, progressed. In the postoperative 6th month, a cataract operation was performed. By the postoperative 7th month, the patient's visual acuity was 0.00 logMAR and the perforation region had recovered completely.

**Keywords:** cornea, corneal perforation, pterygium, autograft, hyperemia

### INTRODUCTION

Peripheral corneal thinning and perforation is an inflammatory process. This case may be related to rheumatoid arthritis, Sjögren syndrome, granulomatosis, polyarteritis nodosa and Stevens-Johnson syndrome. Also, it may be due to Mooren ulceration, trauma, microbial keratitis and secondary to surgeries (1,2). For this patient, with a great probability, surgery induced corneal thinning and perforation.

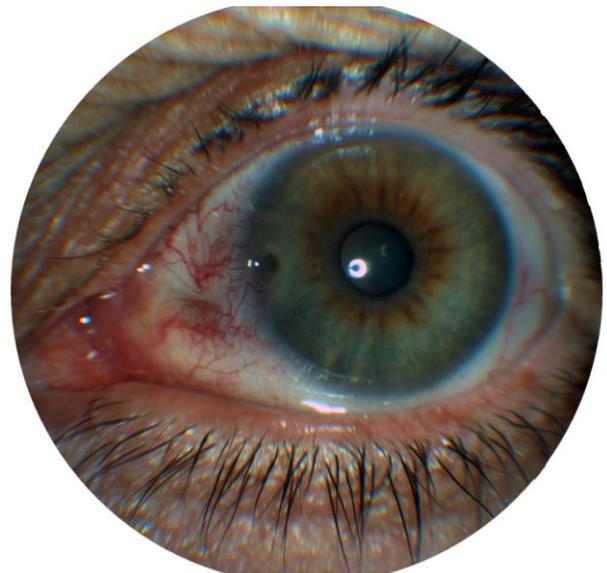
In corneal thinning and perforations, there are different treatment choices. These are cyanoacrylate glues, amniotic membrane transplantation, lamellar and full-thickness corneal grafts (2-4).

### METHOD

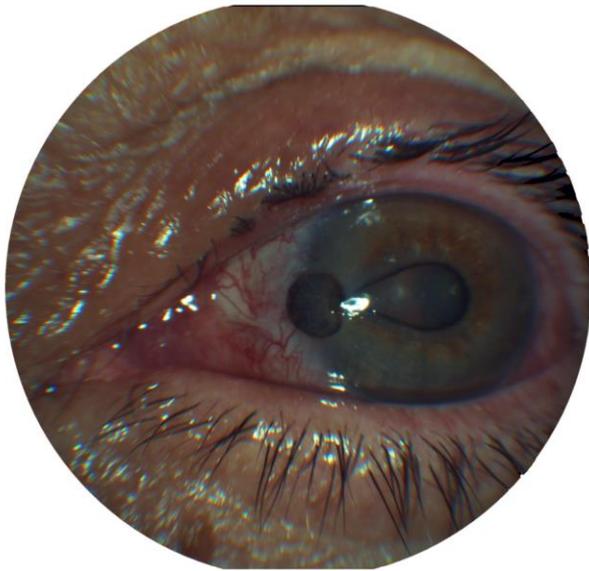
A male patient, 59 years of age, who had undergone a pterygium operation 45 days ago in another center, applied to our clinics for itching and burning complaints. The patient was examined and thinning of the cornea at the perilimbal region and intense hyperemia, inflammation and scarred tissue in the nasal conjunctiva were observed (**Figure 1**). Additionally, the patient had chronic dacryocystitis. Firstly, an external dacryocystorhinostomy (DSR) operation was applied. Three days after the operation, corneal perforation and iris prolapse occurred (**Figure 2**).

An autograft, including conjunctiva, limbus and neighbouring corneal tissue with lamellar excision from the superior region of the same eye, was taken. The operation side was inflamed and scarred. There was irritation and hyperemia due to fibrotic conjunctiva tissue. Fibrotic

conjunctiva tissue was excised. The iris prolapse was also excised to prevent infections. Then, viscoelastic material was injected into the anterior chamber. Debridement was applied to the edges of the perforated cornea. With the help of 10/0 monofilament nylon sutures, the autograft was implanted. Viscoelastic material was removed from the anterior chamber.



**Figure 1.** The first appearance of the eye



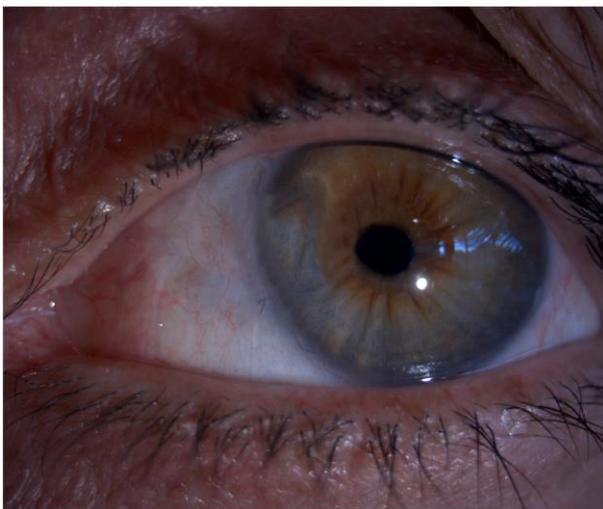
**Figure 2.** Corneal perforation and iris prolapse

An informed written consent was signed and obtained from the patient before the operations. “I permit that the images related to my disease can be published in scientific journals, meetings and congress” statement is present in the consent.

Since this study is a case report, ethical approval is not present, but an informed consent containing permission for publication was signed by the patient.

## RESULTS

The patient was examined on the 1st day and 3rd day, and at the 1st week, 1st month, 3rd month and 6th month postoperatively. The healing process did not affect the visual axis. Visual acuity arrived at 0.2 logMAR. In the postoperative period, the patient’s cataract, which was present before the operation, progressed. In the postoperative 6th month, a cataract operation was performed. In the postoperative 7th month, the patient’s visual acuity was 0.00 logMAR and the perforation region had recovered completely (**Figure 3**).



**Figure 3.** The last appearance of the eye

## DISCUSSION

In corneal thinning and perforations, there are different treatment choices. These include cyanoacrylate glues, amniotic membrane transplantation, lamellar and full-thickness corneal graft. Cyanoacrylate glue is suitable for small corneal perforations and descemetocoeles. Cyanoacrylates have a slight anti-collagenase effect and cannot prevent corneal vascularization, so it may increase the rejection risk of penetrating keratoplasty (PKP) grafts<sup>3</sup>. For the treatment of paracentral and peripheral corneal descemetocoeles, a very large graft is needed in the PKP operation and this may increase the risk of graft rejection and secondary glaucoma. Such cases may be treated with full thickness corneal patch grafts<sup>2,3,5</sup>. Amniotic membrane transplantation (AMT) is used in corneal thinning and perforations because of its tectonic support. However, if the thinning of the cornea is advanced and it is about to perforate, AMT is not sufficient<sup>6</sup>.

## CONCLUSION

In our case, autograft was a good choice due to tissue compatibility, accessibility and prevention of the other risks.

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