



# Using Finger Prick Autologous Serum Administration and Bandage Contact Lens in Managing Chemical Keratitis and Diabetic Neuropathy



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## BACKGROUND

A 37 year old male with a history of chemical keratitis and uncontrolled diabetes presents for management of neurotrophic keratitis. Management included punctal plugs, bandage contact lenses and self-administration of finger prick autologous serum.

## CASE DESCRIPTION

### June 2018 - chemical injury

A 37 year old male experienced a chemical injury of both eyes when an unknown industrial chemical solution splashed into both his eyes.

### April 9, 2019 – minor corneal complication

The patient presented with blurry vision (20/25-2), yellow/green discharge and crusting of his lid margins in his right eye secondary to chemical keratitis.

Permanent silicone punctal plugs were instilled in the inferior puncta of both eyes. The patient was Rx'd dexamethasone 1 drop bid OU.

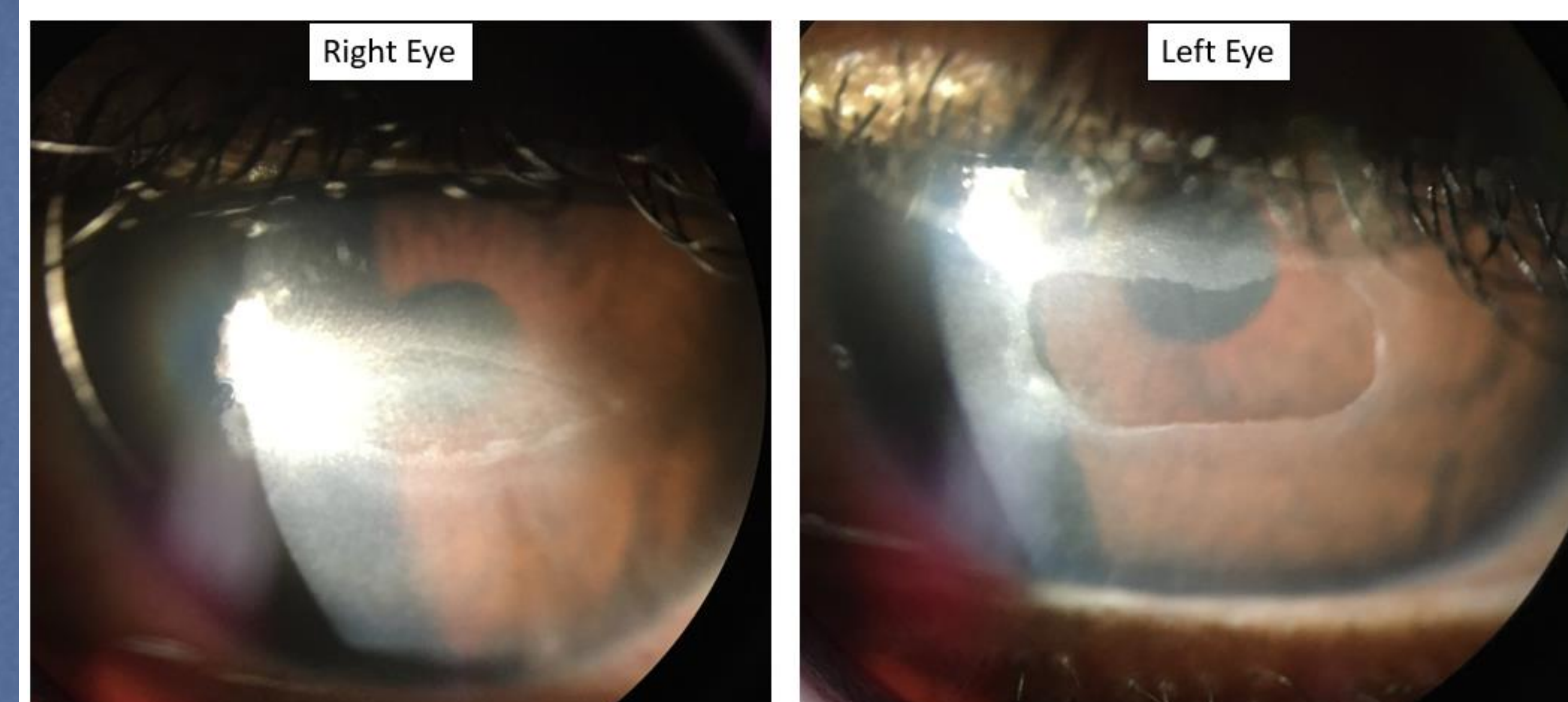
This corneal complication was successfully managed until 1.5 years later.

### November 5, 2020 – major corneal complication

The patient reported significantly blurry vision (20/400) for the last 3-4 weeks. His diabetes was very poorly controlled with blood sugar at 330 mg/dL and an A1C of 11.0%

The patient exhibited no corneal sensation, and he had a dramatically reduced blink rate. Large corneal epithelial defects and diffuse edema was observed in both corneas.

Bandage contact lenses and moxifloxacin tid OU were prescribed. It was also recommended that he perform finger prick autologous blood instillation.



**Photographs from November 5, 2020**  
Corneal anesthesia reduced blink rate resulting in bilateral central corneal epithelial defects and diffuse edema with blurring of vision



**Photograph from November 11, 2020**  
Re-epithelialization beginning after therapy with BCL, moxifloxacin and finger prick autologous blood instillation

## RESULTS

### November 11, 2020

At the one week follow up the patient reported successfully instilling blood in his eyes 2-3 x's / day. Visual acuity had improved to 20/200 in each eye. The corneal defect in the right eye had healed, with a small persistent defect in the left eye cornea centrally remaining.

Punctal plugs were inserted in the superior puncta of each eye. The patient was instructed to also start Pred Acetate bid x 1 week.

### December 3, 2020

At three weeks, the visual acuity continued improving to 20/60 in each eye. Over the course of the next several weeks, subsequent visits showed resolution of the corneal edema and defects.

## CONCLUSIONS

This case illustrates the multiple managements that may be necessary when treating patients with neurotrophic keratitis and chemical burns.

The patient's uncontrolled diabetes contributed to hypoesthesia of the patient's cornea. This loss in sensation contributed to a significantly reduced blink rate, more corneal exposure and subsequent corneal abrasions in both eyes.

Management included the use of punctal plugs in all four puncta, topical corticosteroid, topical antibiotic, self-administration of finger prick autologous serum and bandage contact lenses. Further management may include amniotic membrane and/or tarsorrhaphy if the condition declines further.

## DISCLOSURE

- No conflicts of interest
- No internal/external funding