

# Corneal Ulcer on the Verge of Rupture: An ocular emergency in a free-standing emergency room

Dr. Kevin D. Thomas, D.O., PGY-1, Family Medicine, and Dr. Garrett Root, D.O., Emergency Medicine

## Background

- Chief complaint of foreign body sensation in eye can have a broad differential therefore making a detailed ophthalmologic exam crucial to disposition
- Jaymanne (1995): 68% of patients presenting with foreign body sensation had a superficial non-penetrating corneal foreign body while marginal keratitis (1.4%), episcleritis (0.4%), and contact keratitis (0.2%) were still found in this sample population
- Ksia et al. (2021): Hypopyons, whether infectious or non infectious, are a marker of substantial intraocular inflammation. If a hypopyon is present in the setting of bacterial keratitis, corneal involvement is often severe, which can lead to increase length of stay and poorer clinical outcomes

## Case Report

T.H., a 57yo welder and contact lens wearer, presented to a free-standing emergency department with a one-day history of worsening right eye pain. The patient stated that he was using an acetylene torch—but wearing eye protection—at his job the day prior when he felt a foreign-body sensation in his eye. He reported that his vision was blurry and that he could only see the outlines of objects out of his right eye, but his left eye's vision was intact. When asked about his prior eye health history, the patient stated that his optometrist has told him that the pressures in his eyes are slightly elevated and that he has the beginnings of bilateral cataract development.

### Physical Exam Findings

- Conjunctival Injection
- Tan 2mm round lesion at the 10 o'clock position of his partially obstructing his iris
- Intraocular pressures: 37 OD, 48 OS
- Fluorescein and tetracaine slit lamp exam, as shown in images

## Images

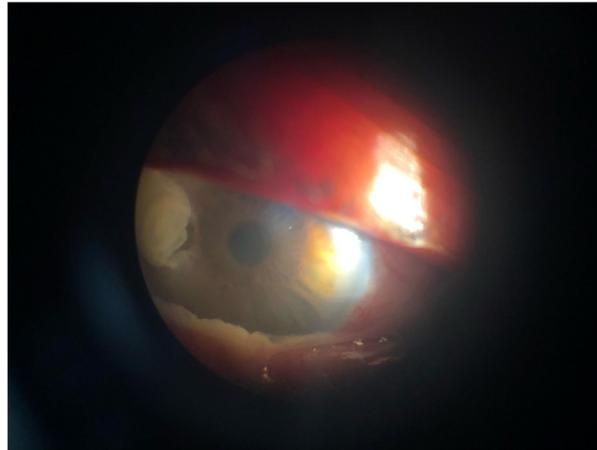


Figure 1: Corneal ulcer located at the 10 o'clock position in the R eye

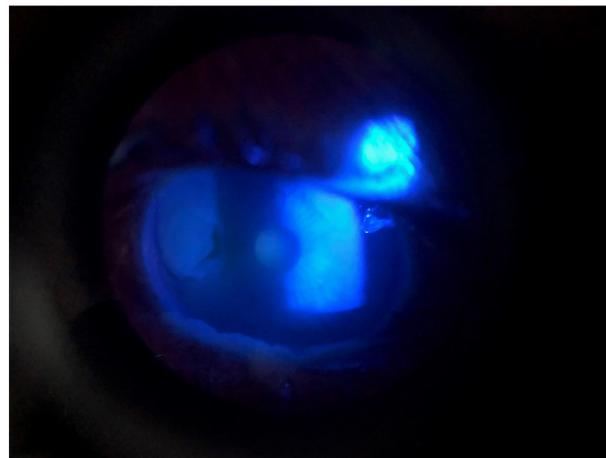


Figure 2: Seidel's sign negative

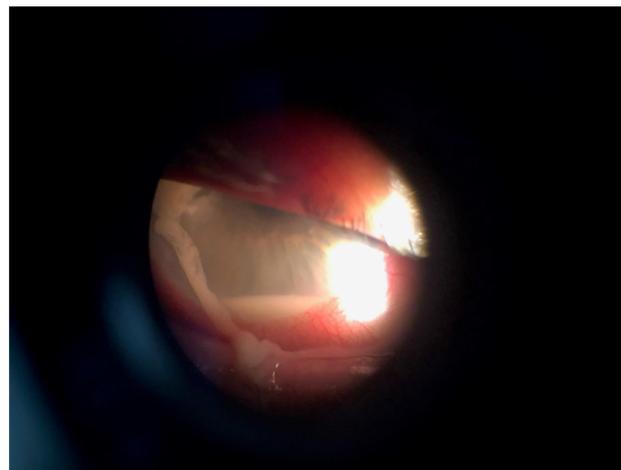


Figure 3: Hypopyon located at the base of the iris

## Treatment Plan

- Urgent Ophthalmology referral
- Gentamicin ointment
- Follow-up phone call
  - Urgent presentation to Academic Center
  - 1 day hospital admission
  - Prolonged course of steroids and antibiotics
  - Scarring of cornea
  - Return of vision

## Discussion

- Importance of a thorough ophthalmologic exam with any complaint of foreign-body sensation in the eye
- Individuals with isolated corneal abrasions who should receive prompt ophthalmologic evaluation
  - Corneal infiltrate, white spot or opacity suggesting ulceration
  - Foreign body that cannot be removed
  - Hypopyon (pus) in the anterior chamber
- Treatment
  - Foreign body removal (if possible)
  - Topical antibiotics: consider Pseudomonas coverage if a contact lens wearer

## References

1. Jayamanne, D.G.R. Do patients presenting to accident and emergency departments with the sensation of a foreign body in the eye (gritty eye) have significant ocular disease? J. Accident and Emergency Medicine, 1995;12, 286-287, doi: 10.1136/emj.12.4.286.
2. Ksia, I., et al. Hypopyon: Is it infective or noninfective? Ocular Immunology & Inflammation, 2021;29(4):817-829, doi: 10.1080/09273948.2021.1922708
3. Up-to-Date: Corneal abrasions and corneal foreign bodies: management.