CLINICAL IMAGE

Corneal Abrasion With a Twist

Farah Ferreiro, DO[1]; David Remmer, MD[1]

[1] Lakeland Regional Health, Lakeland, FL

KEYWORDS

Corneal abrasion • Bacterial keratitis

CASE PRESENTATION

Sixty-one-year-old male presents to urgent care for right eye pain that has been worsening over the last 4 days. Patient is now having photophobia and pain with opening his eye, which concerned him. He also states he sees a "big glob" in his visual field. This has never happened to him before. He wears contact lenses but has not slept in them and has not worn them in the last 4 days. He has not had any trauma. He attempted to take Benadryl, Tylenol, and use Visine eyedrops without any relief. He denies any sick contacts but does endorse some subjective fevers and chills. On corneal exam, a staining defect was present with hypopyon in anterior chamber, otherwise clear of other abnormalities.

FIGURE 1: Corneal Infiltrate With Hypopyon

QUESTION

1. What is the most likely diagnosis in this patient presenting with photophobia, corneal epithelial defect, and hypopyon?

A. Viral conjunctivitis

B. Bacterial keratitis

C. Corneal abrasion

D. Acute angle-closure glaucoma

E. Herpes simplex keratitis

Correct Answer: B. Bacterial keratitis

2. What is the most common pathogen associated with contact lens–related corneal infections?

A. *Staphylococcus aureus*

B. *Streptococcus pneumoniae*

C. *Pseudomonas aeruginosa*

D. *Acute angle-closure glaucoma*

E. *Moraxella catarrhalis*

Correct Answer: C. *Pseudomonas aeruginosa*

CORRESPONDENCE:
Farah Ferreiro, DO | farahleclercq@gmail.com

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3. What is the most appropriate next step in management?

A. Prescribe topical steroids and reassess in 72 hours

B. Reassure and discharge home with artificial tears

C. Emergent ophthalmology referral and start topical antibiotics

D. Initiate systemic steroids

E. Observe in clinic for 24 hours

Correct Answer: C. Emergent ophthalmology referral and start topical antibiotics

Discussion

Corneal abrasions are common ocular injuries encountered in urgent care and primary care settings, often resulting from mechanical trauma, foreign bodies, environmental exposures, or improper contact lens use. These abrasions typically involve a disruption in the corneal epithelium and are characterized by acute onset of eye pain, photophobia, tearing, foreign body sensation, and blurred vision. The presence of a hypopyon, as seen in the image provided, raises concern for a more severe condition, such as bacterial keratitis or endophthalmitis. While most corneal abrasions heal within 24-72 hours, they remain susceptible to secondary infections, particularly in contact lens wearers, who are at heightened risk for Pseudomonas aeruginosa infection due to the bacteria's association with contaminated lenses and lens solutions.[1]

For uncomplicated abrasions, management typically involves use of prophylactic topical antibiotics to reduce risk of secondary infection, especially for contact lens wearers. Fluoroquinolones or aminoglycosides are commonly used to provide broad-spectrum coverage, with particular attention to Pseudomonas. Topical analgesics and cycloplegic agents are also used for symptom relief. However, use of topical anesthetics is generally avoided due to potential for corneal toxicity and delayed healing.[2] The primary goal in treating corneal abrasions is to ensure proper healing while preventing infection, which is essential to avoid long-term visual complications.[1]

When symptoms fail to improve or worsen within 24-48 hours, clinicians must consider bacterial keratitis, a vision-threatening infection characterized by corneal epithelial defects with stromal infiltration. A hypopyon, as seen in this case, is a significant finding indicative of intraocular inflammation and necessitates urgent ophthalmologic evaluation.[3] Pseudomonas aeruginosa is the most common pathogen responsible for contact lens–associated keratitis and is known for its aggressive and rapidly destructive course. Symptoms of bacterial keratitis include increasing pain, photophobia, reduced visual acuity, and development of corneal opacities or infiltrates.[4]

The first line of management for bacterial keratitis involves broad-spectrum topical antibiotics, such as fluoroquinolones, or fortified vancomycin and tobramycin. These antibiotics offer extensive coverage, including Pseudomonas, which is crucial in preventing vision loss. Immediate referral to an ophthalmologist is recommended for further evaluation and management. Topical corticosteroids should be avoided in the initial phase of treatment, as they can exacerbate infection and delay healing.[2]

In addition to immediate management, patient education on proper contact-lens hygiene, such as avoiding extended use, not reusing contact lens solution, and frequent replacement of contact lens cases, is crucial.[2] Proper education and follow-up can significantly reduce risk of recurrent infections and preserve long-term visual outcomes.[3]

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