A Case Series of Geographic Corneal Abrasions secondary to Epidemic Keratoconjunctivitis

Kathryn Hohs, OD, FAAO [1], Negar Sohbati OD, FAAO [2], and Megan Byer OD, FAAO [3]

Affiliations: [1]Illinois College of Optometry, Chicago IL; [2]Victoria Village Optometry, Toronto, ON; [3]ERC Optometry, Brooklin, ON

3241 South Michigan Avenue, Chicago, Illinois 60616

INTRODUCTION

This case series describes three patients who presented to the Illinois Eye Institute with similar, but uncommon, clinical presentations of epidemic keratoconjunctivitis (EKC). All patients developed a large diameter central corneal epithelial defect during their infection. Corneal involvement in the form of sub-epithelial infiltrates (SEI) and punctate keratitis is commonly seen with EKC, but large geographic corneal abrasions are rarely encountered or documented.

CASE PRESENTATION

TABLE 1
CC-HPI

Case #:	Demographic	Chief complaint	Ocular/Medical history
1	40-yo AA female	Redness, swelling and eye pain OD>OS	No known ocular history, (+) anemia
2	21-yo Hispanic male	Redness OS>OD	None
3	35-yo AA male	Redness and eye pain OD>OS	None

TABLE 2
Clinical Findings

Case #:	BCVA	Conjunctiva	Cornea
1	20/20 OD, 20/20 OS	Diffuse injection, (+) follicles OU	5mmx4.5mm abrasion on day 3 OD
2	20/25 OD, 20/50- OS	Diffuse injection, (+) follicles OU **(Image 3)**, (+) pseudo-membrane LLL&RLL	(+) SEI OD, 6mmx5mm abrasion OS **(Image 1)** at presentation
3	20/30 OD, 20/25 OS	Diffuse injection, (+) follicles OU, (+) pseudo-membrane RLL **(Image 4)**	Large central, superficial abrasion OD at presentation **(Image 5)**

Additional pertinent findings:

Case #1: (+) Quickvue Adenoplus test, **Case #2**: Palpable pre-auricular lymphadenopathy

TABLE 3
Treatment

Case #:	Tx for corneal abrasion	Tx for EKC	Response to Tx
1	BCL + Polytrim qid OD, PF AT q1hr OD	Betadine wash OS. PM* peel OS. FML qid OS.	Corneal abrasion resolved on day 8.
2	Erythromycin ung qid OS, PF AT q1hr OS	PM* peel OU, Betadine wash OD. Steroid/AB combo.	Corneal abrasion resolved on day 4 **(Image 2)**
3	Erythromycin ung tid OD, PF AT q1hr	PM* peel OD. TobraDex qid OS	Corneal abrasion resolved on day 4.

*PM = Pseudo-membrane

IMAGE 1
6mmx5mm corneal abrasion OS at initial presentation; patient 2

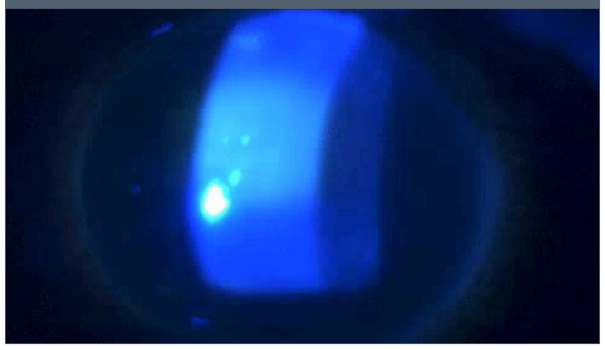


IMAGE 2
Resolved abrasion 4 days after initial presentation; patient 2

IMAGE 3
3+ follicular reaction on lower lid OD at initial presentation; patient 2

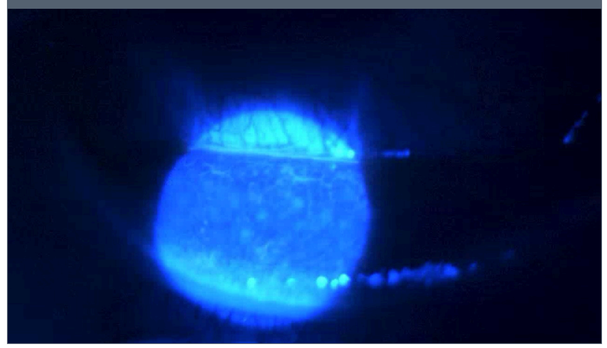


IMAGE 4
pseudo-membrane OD lower eyelid at initial presentation; patient 3

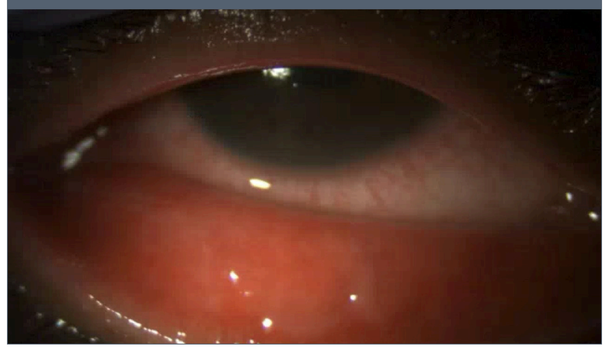
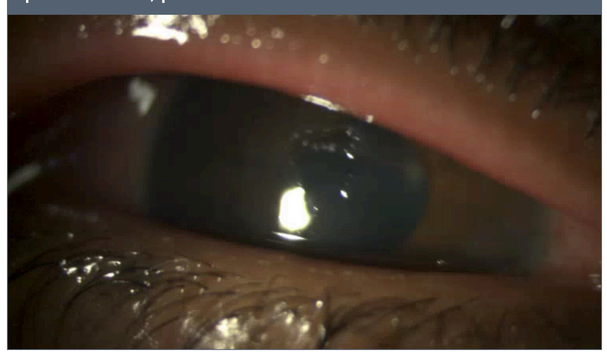


IMAGE 5
central, superficial corneal abrasion OD at initial presentation; patient 3



DIAGNOSIS & DISCUSSION

All three patients presented with similar complaints and classic clinical presentations of EKC including follicular reaction, pseudo membrane formation and conjunctival injection. Interestingly, they each developed large, superficial corneal abrasions during their infection. Few case reports exist of EKC presenting with geographic corneal abrasion, and all reported patients had confirmed human adenovirus serotype 8 (HAdV8). The underlying pathophysiology of an epithelial defect due to EKC is not well understood. It is thought to be due to pre-existing anterior segment disease and/or replication of the virus within the corneal epithelium.

EKC is difficult to manage given the patient's significant symptoms and additional discomfort of pseudo-membrane removal and Betadine wash. A concomitant epithelial defect exacerbates EKC related symptoms and presents concern for secondary infection. Additionally, it complicates the treatment options for the provider. Debate exists over the use of a BCL in the setting of viral infection, and a Betadine wash is contraindicated in the presence of an epithelial defect. Ultimately, a BCL was selected for patient 1 due to the non-resolving nature of the epithelial defect and significant patient pain, but a BCL was not necessary for patient 2 and 3.

CONCLUSION

HAdV8 is the most common cause of EKC worldwide. Its distinguishing clinical features include SEI, punctate keratitis and severe conjunctivitis. Geographic corneal abrasion, though less reported and understood, is another potential clinical finding during the course of the infection. Clinicians should be aware of this unique presentation of EKC, and the management challenges it presents.

REFERENCES

Available upon request

CONTACT

Kathryn Hohs, O.D.
Kahohs@ico.edu