

## Infectious Crystalline Keratopathy

**Category(ies):** Cornea

**Contributor:** [Lauren E. Hock, MD](#) and [Mark A. Greiner, MD](#)

**Photographer:** Antoinette Venckus, CRA; Photomicrographs by Nasreen Syed, MD

This 73-year-old male patient presented to the Cornea service with a one-week history of right eye redness and pain. He had a remote history of open globe with multiple subsequent penetrating keratoplasties and a recent macula-involving retinal detachment all in the right eye with resulting hand motions vision. He was diagnosed with suture-related infectious crystalline keratopathy with associated epithelialized stromal melt. The dense crystals seen within the deep stroma represent arborizing aggregates of an infectious agent, often alpha-hemolytic streptococcus or *Candida albicans*, and often originating from a suture track. Microbial colonies proliferate within stromal lamellar spaces and are shielded by a biofilm [1]. Corneal cultures are often negative. Lack of host inflammatory response may be due to chronic immunosuppression, tear film irregularity, or suture [2].

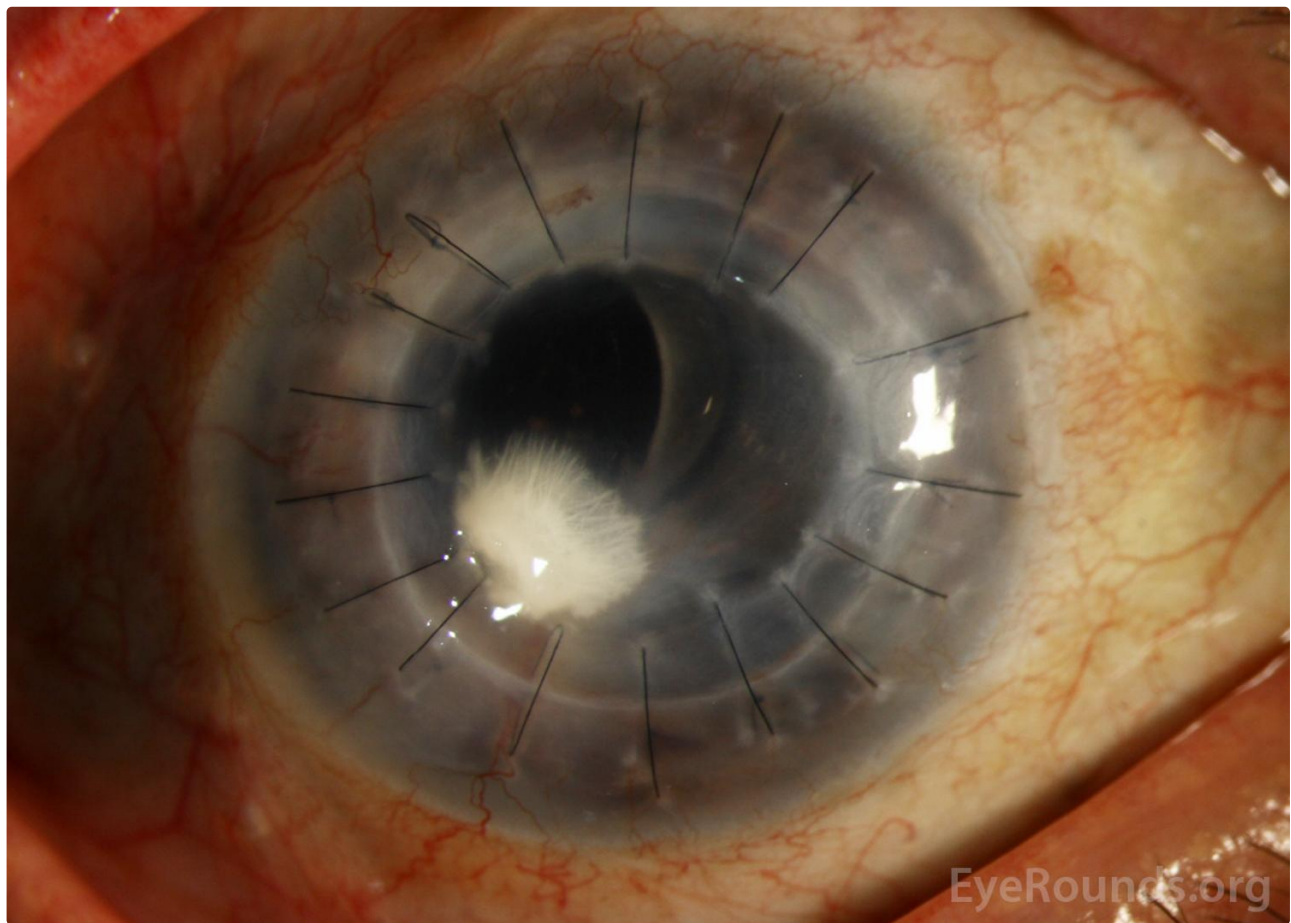


Figure 1. Slit lamp photograph of the right eye shows mild injection, penetrating keratoplasty graft with 1 x 1 mm epithelialized melt with white crystalline infiltrate sprouted within stroma extending 2.5 mm x 2.5 mm and large keratic precipitates posterior to involved area. Patient was also noted to have central striae, stromal edema, and Descemet's folds with no cell, 1+ flare, and inferonasal membranes along endothelium and iris. Corneal scraping was negative.

[Enlarge](#)

[Download](#)

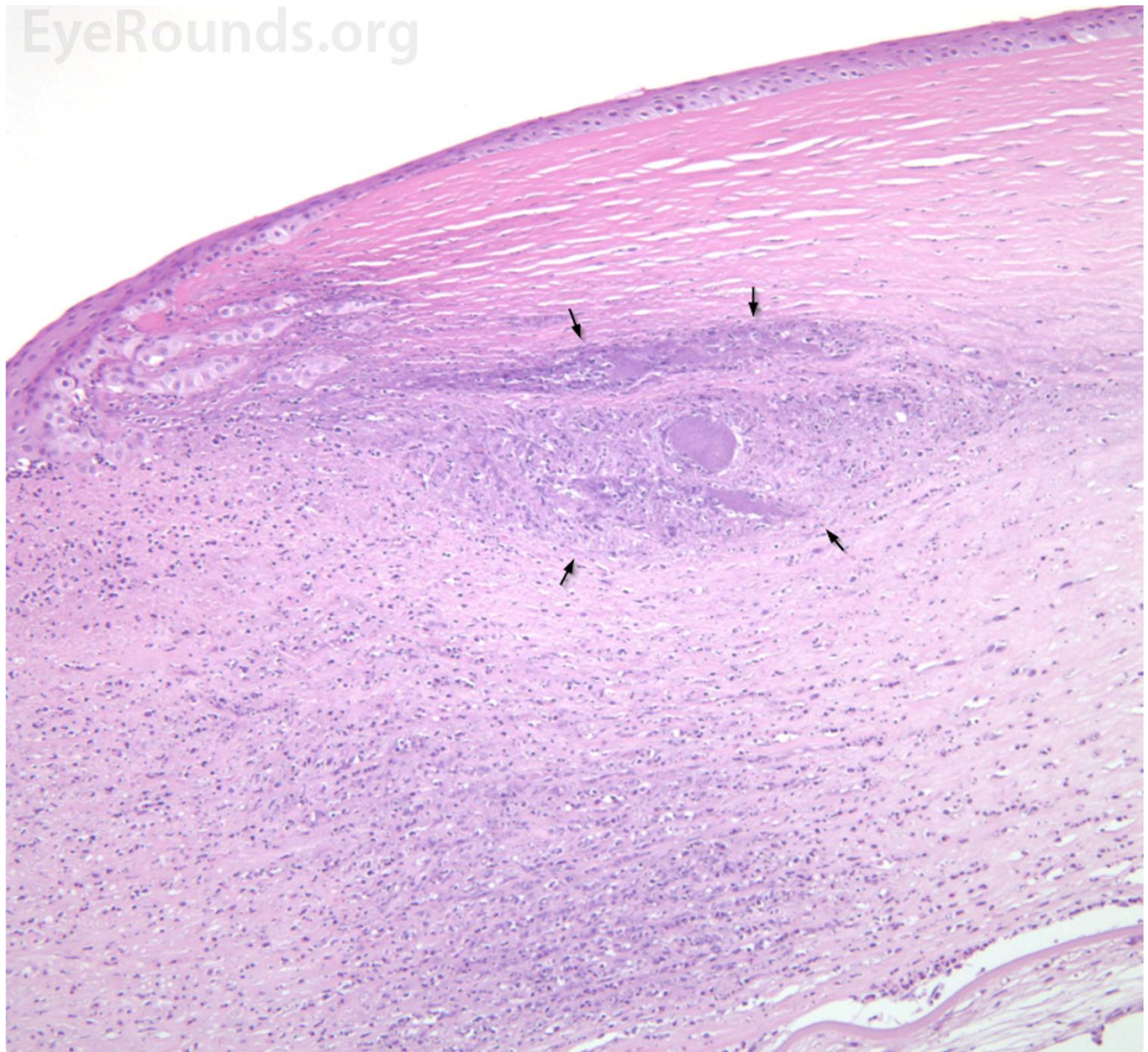


Figure 2. Lower power photomicrograph (H&E stain, original magnification = 50x) of cornea demonstrates sequestrations of basophilic granular material (arrows) within the corneal stroma adjacent to a previous penetrating keratoplasty wound.

[Enlarge](#)

[Download](#)



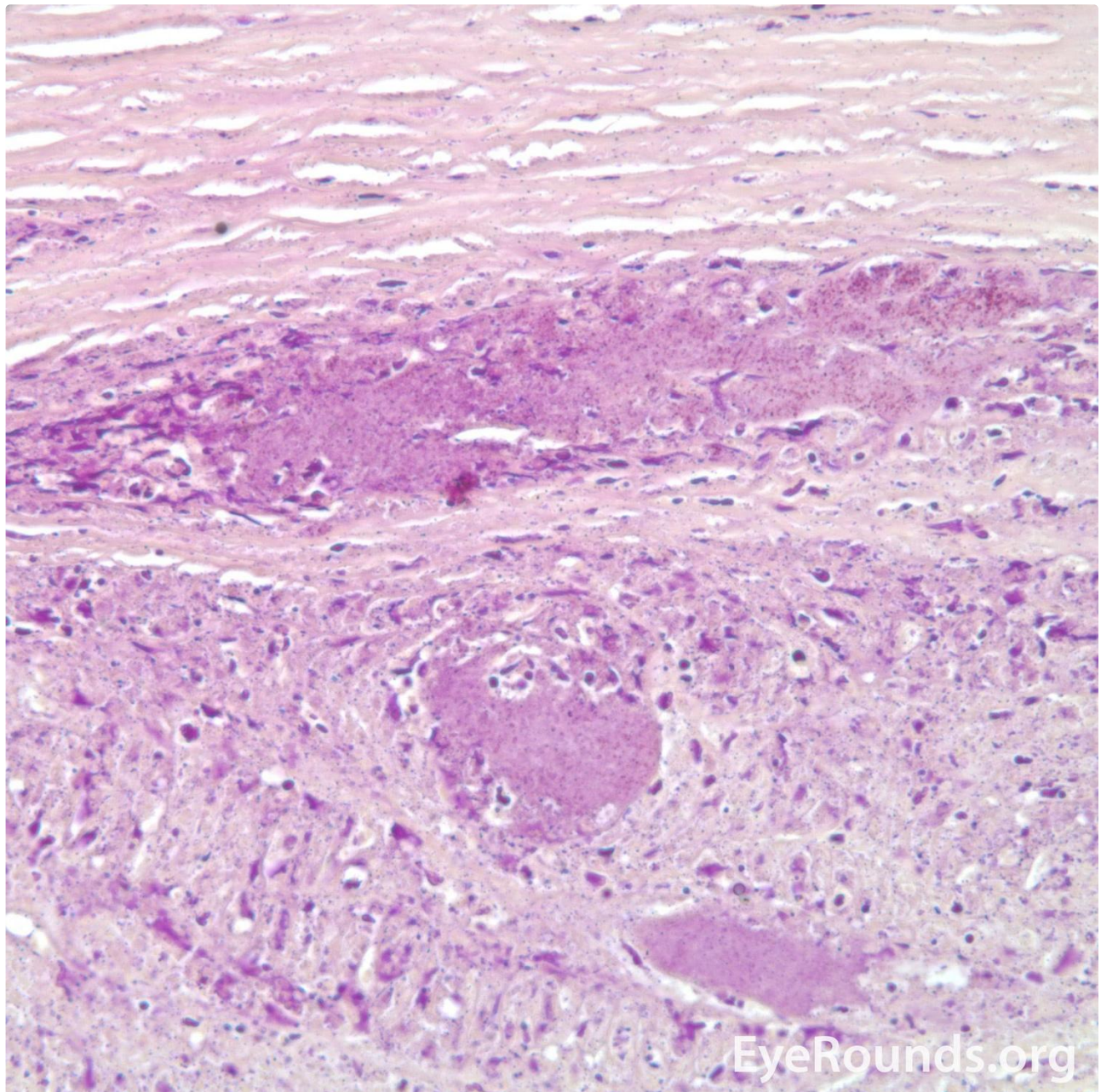


Figure 3. High power photomicrograph (Gram stain, original magnification = 200x) shows presence of gram positive cocci in the sequestrations without appreciable surrounding inflammation.

Contributor: [Matt Ward, MD](#)

This 73-year-old male patient presented to the Cornea service with a one-week history of right eye redness and pain. He had a remote history of open globe with multiple subsequent penetrating keratoplasties and a recent macula-involving retinal detachment all in the right eye with resulting hand motions vision. He was diagnosed with suture-related infectious crystalline keratopathy with associated epithelialized stromal melt. The dense crystals seen within the deep stroma represent arborizing aggregates of an infectious agent, often alpha-hemolytic streptococcus or *Candida albicans*, and often originating from a suture track. Microbial colonies proliferate within stromal lamellar spaces and are shielded by a biofilm [1]. Corneal cultures are often negative. Lack of host inflammatory response may be due to chronic immunosuppression, tear film irregularity, or suture [2].



[Enlarge](#) [Download](#)

Contributor: [Andrew Doan, MD, PhD](#)

Infectious crystalline keratopathy in corneal transplant graft. Often strep viridans is the culprit.





[Enlarge](#) [Download](#)

#### Reference:

- Porter AJ, Lee GA, Jun AS. Infectious crystalline keratopathy. Surv Ophthalmol 2018;63(4):480-499. <https://pubmed.gov/29097211>. DOI: 10.1016/j.survophthal.2017.10.008
- Mannis MJ, Holland EJ. Cornea. Fourth edition. ed.

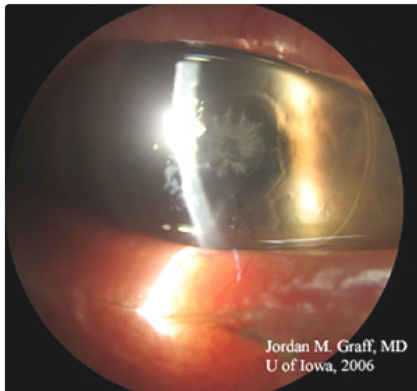
#### Image Permissions:



Ophthalmic Atlas Images by [EyeRounds.org](#), [The University of Iowa](#) are licensed under a [Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License](#).



#### Related Articles



[Related Case: Infectious Crystalline Keratopathy \(ICK\)](#)

#### Address

University of Iowa  
Roy J. and Lucille A. Carver College  
of Medicine  
Department of Ophthalmology and  
Visual Sciences  
200 Hawkins Drive  
Iowa City, IA 52242

#### Legal

Copyright © 2019 The University of  
Iowa. All Rights Reserved  
Report an issue with this page  
Web Privacy Policy |  
Nondiscrimination Statement

#### Related Links

Cataract Surgery for Greenhorns  
EyeTransillumination  
Gonioscopy.org  
Iowa Glaucoma Curriculum  
Iowa Wet Lab  
Patient Information  
Stone Rounds  
The Best Hits Bookshelf

#### EyeRounds Social Media

Follow



Receive notification of new cases,  
sign up here  
[Contact Us](#)  
[Submit a Suggestion](#)

