Could it be KC (KERATOCONUS)?

KC File #4: A Troublesome Toric Contact Lens Fit

Bill "Bond" Tullo, OD, FAAO, Princeton, NJ
Dr. Tullo is a paid consultant for Glaukos.

I saw a new patient, a 17-year-old boy. His recently prescribed spectacles were fine—he had no visual complaints—but he disliked wearing glasses when playing soccer and wanted to try part-time contact lens wear. The history and exam were totally unremarkable, other than noting that vision in his left eye wasn't quite as sharp as in the right eye. The patient had no systemic or ocular health issues, no allergies, and was not on any medications.

Insertion and removal training was successful, and I fit him in daily disposable soft toric contact lenses (Precision1 for Astigmatism, Alcon) with a prescription of -2.00 -0.75 x 010 OD and -2.50 -1.25 x 170 OS. He reported good fit and comfort in the office and left happy.

However, at the 1-week follow-up appointment, the patient complained of blurry vision in the left eye and was seeing only 20/25 +1 in that eye. Based on a contact lens over-refraction, we ordered a new lens for the left eye with a slightly different axis (see box). One week after that, the patient returned with similar complaints of blurry vision. Again, an over-refraction suggested a slightly different lens, this time with a lower cylinder correction. Finally, a week later, when the patient returned still unhappy with his vision in the left eye and the over-refraction would have suggested yet a different toric power, I ordered corneal imaging of both eyes.

Left Eye Toric Lens

	LENS	ACUITY AT 1 WEEK	CONTACT LENS OVER-REFRACTION
Attempt #1	-2.50 -1.25 x 170	20/25 +1	+0.25 -0.75 x 145
Attempt #2	-2.50 -1.25 x 160	20/25 +2	Plano -0.50 x 055
Attempt #3	-2.50 -0.75 x 160	20/25 -1	Plano -0.50 x 015

KC File #4: THE CLUES

- ➜ Instability with toric soft lenses
- ➜ Difficulty with refraction in only 1 eye
- ➜ Visual quality complaints
- ➜ Topographic irregularities

Topography/tomography imaging showed irregular astigmatism, abnormal elevation of the posterior cornea, and mild corneal thinning in the left eye, all consistent with a diagnosis of subclinical keratoconus that is worse in the left eye than in the right. This patient is being monitored every 3 months for progression and will likely undergo iLink cross-linking in the future.

Difficulty in soft toric lens fitting, with shifting refractions and vision that just isn't crisp, is a significant clue that something might be wrong with the cornea. It should not take 3 or 4 lenses to successfully fit a young, healthy patient. However, corneal ectasia causes irregular astigmatism, which makes correction in toric soft contact lenses difficult. I also noticed that this teen was confident and precise when I tested his right eye at the phoropter, but much more hesitant in reading the letters and responding to "Better 1 or 2?" with the left eye. This asymmetry in decision-making was another red flag or clue. I am fortunate to have in-house topography/tomography, but for those who don't, I would encourage a referral for imaging in cases like this. If an immediate referral isn't practical, one might also consider fitting a corneal GP, scleral, or hybrid lens with over-refraction to see if the visual acuity improves. If it does, that is a strong indication of keratoconus and a referral for further corneal evaluation is needed.

By following the KC clues that are hiding in plain sight, you can help young patients get diagnosed and treated earlier, preserving their vision and corneal stability. Visit iDetectives.com to learn more.

#FollowTheClues

iDetective
Following the clues for early KC detection

Were you able to **Detect the Clues** in the **Keratoconus Case Study** on the other side of this page?


Could it be KC (KERATOCONUS)?

KC File #4: A Troublesome Toric Contact Lens Fit

Left Eye Toric Lens

	Lens	Acuity at 1 Week	Contact Lens Over-Refraction
Attempt #1	-2.50 -1.25 x 170	20/25 -1	+0.25 -0.75 x 150
Attempt #2	-2.50 -1.25 x 160	20/25 -1	Plano -0.50 x 015
Attempt #3	-2.50 -0.75 x 160	20/25 -1	Plano -0.50 x 015

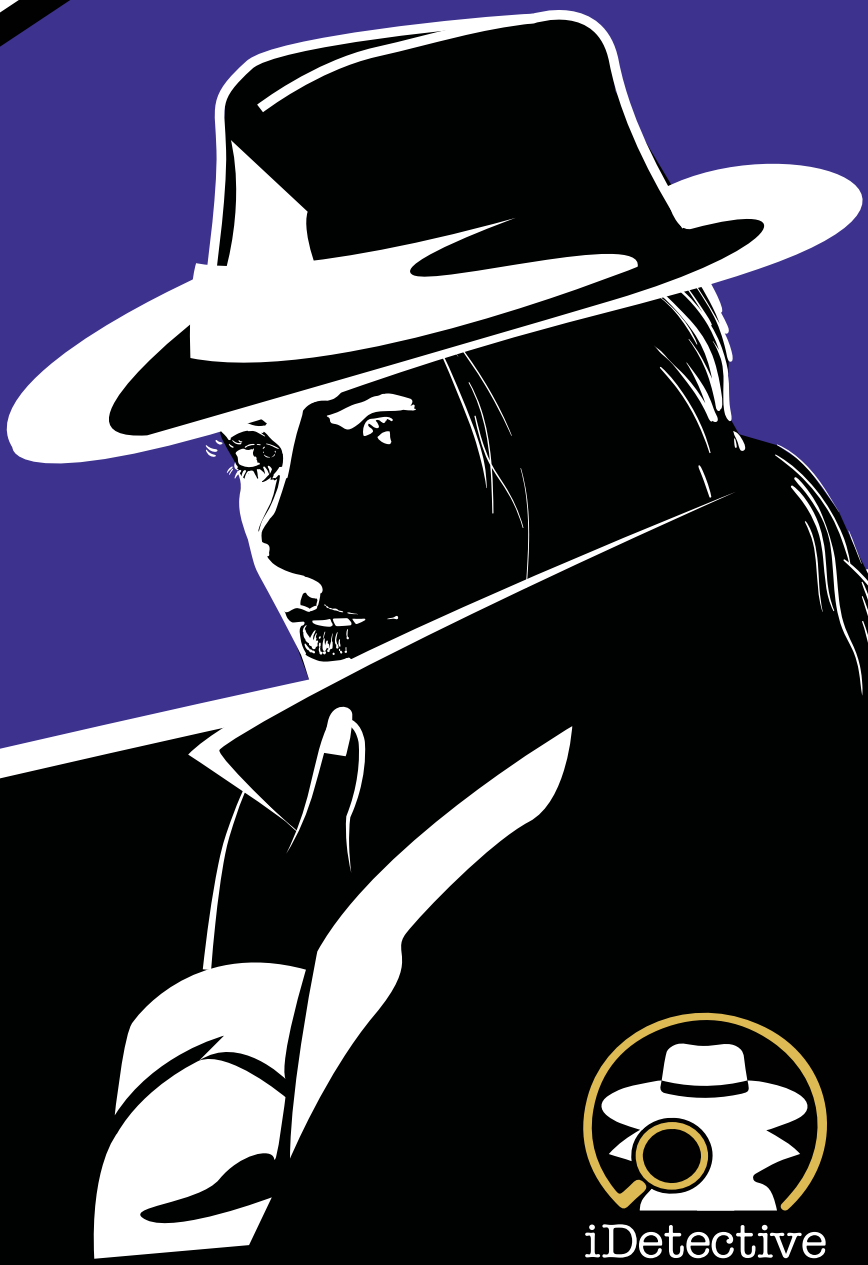
KC File #4: THE CLUES
- Instability with toric soft lenses
- Difficulty with refraction in only 1 eye
- Visual quality complaints
- Topographic irregularities

iDetective
Following the clues for early KC detection

iLink | GLAUKOS

Want to know more?
At iDetectives.com, find more resources, including all the clues to help you detect keratoconus, an iLink physician locator, the full download on what to expect post-cross-linking, and more!

It's time to #FollowTheClues...



iDetective

INDICATIONS Photrexa® Viscous (riboflavin 5'-phosphate in 20% dextran ophthalmic solution) and Photrexa® (riboflavin 5'-phosphate ophthalmic solution) are indicated for use with the KXL System in corneal collagen cross-linking for the treatment of progressive keratoconus and corneal ectasia following refractive surgery.

IMPORTANT SAFETY INFORMATION Corneal collagen cross-linking should not be performed on pregnant women. Ulcerative keratitis can occur. Patients should be monitored for resolution of epithelial defects. The most common ocular adverse reaction was corneal opacity (haze). Other ocular side effects include punctate keratitis, corneal striae, dry eye, corneal epithelium defect, eye pain, light sensitivity, reduced visual acuity, and blurred vision. These are not all of the side effects of the corneal collagen cross-linking treatment. For more information, go to www.livingwithkeratoconus.com to obtain the FDA-approved product labeling. You are encouraged to report all side effects to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.