

**SECO Contact Lens Summit –
A Day in the Life of a CL Expert: Cases to Make You Laugh or Cry**
(2 hours)

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Course description:

Step into the shoes of a seasoned contact lens expert and experience the unpredictable and sometimes heartbreaking reality of clinical life. This course walks you through a series of real-world contact lens cases—ranging from amusing to seriously complex. You'll laugh, cringe and pick up practical pearls for managing even the trickiest lens fits.

Learning Objectives:

- Analyze complex and unusual contact lens cases to improve clinical problem-solving
- Identify common pitfalls and unexpected challenges in specialty lens fitting
- Apply practical strategies to manage difficult or failed contact lens fits
- Recognize emotional and interpersonal dynamics in challenging patient interactions
- Translate real-world case experiences into improved patient care and outcomes
- Incorporate clinical pearls and lessons learned into daily contact lens practice

Introduction

Case 1: GP Translating/Alternating Vision Multifocal

Patient: 71 year old, Caucasian female

History: hypertension, hypercholesterolemia, breast cancer 1 year prior (remission)

Medications: losartan, metoprolol, Plavix, atorvastatin,

Refractive Error: OD: -4.25-0.50x068 OS: -3.00-0.50x125 Add:
+2.75 DS

Best Spectacle Corrected VA OD: 20/20 OS: 20/20

K's: OD: 42.00 / [42.25 @ 158](#) OS: 42.25 / 42.75 @ 33

Multifocal Options

- Soft

- Several Options:
 - Majority are center-near designs; monthly, two-week, single use options
 - Center-Distance designs: monthly option, single use option
 - Different applications
 - Monovision
- Gas Permeable
 - Simultaneous / Aspheric
 - Posterior aspheric, anterior aspheric, bi-aspheric
 - Discuss warpage – particularly with posterior aspheric
 - Great for early to mid presbyopia; provide good intermediate vision
 - Typically comfortable for patients
 - Optics require great centration with some vertical lens translation in downgaze
 - Translating / Alternating
 - Bifocal or trifocal options; distinct segments or blended
 - Due to single vision optics, very good vision; great for high presbyopia
 - May be a little uncomfortable for a new wearer; Established GP wearers adapt easily
 - Assess lid anatomy
- Patient
 - Has been a long time GP wearer
 - Does not have much corneal astigmatism or spectacle astigmatism so GP not critical
 - High presbyopia (+2.75 DS) and she reports loving to read books, not on computer much
 - Pursued GP translating trifocal, segmented design
 - Review where lenses are designed to be positioned on the eye
 - Patient achieved 20/20 distance visual acuity with each eye at distance
 - Good near vision 20/20 in downgaze; both lenses translated appropriately – (demonstrate with images)
 - Material selection
 - This was a successful fit and the patient was very happy with her lens comfort and her vision

Case 2: Foggy days in Athens

Patient: 25 year old Caucasian male

History: sleep apnea, acid reflux; no medications

Ocular history: keratoconus worse in the right than the left; visited Toronto to have the Athens Protocol performed on the right eye only in April 2024 (PTK + topography guided PRK + Cross linking)

- Patient developed persistent corneal haze right eye; still has irregular astigmatism OD
- Dissatisfied with the distorted image quality of the right eye
- Manifest Refraction Data:
 - OD: -6.75 -2.25x045 20/25-2
 - OS: -7.75-2.00x164 20/20
- Slit Lamp

- No slit lamps signs of keratoconus OS; OD = Fleischer ring, stromal haze superior temporal and inferior pupil margin. Inferior patch of haze was 3mm x 3mm
- Contact Lenses:
 - Patient only wanted to pursue a scleral lens fitting for the right eye = 20/25 VA with OR
- Plan:
 - Order scleral lens for right eye – planned to assess fit and vision at a dispense visit, also assess higher order aberrations (HOAs)
 - Prescribe compounded ophthalmic losartan 0.08% (6 times per day) for 4 months
- Dispense:
 - The lens fit well, minor adjustments BScleralCVA = 20/25
 - Still not satisfied with visual acuity, though did subjectively report better vision than spectacles
 - Significant HOAs, ordered a base lens (lens with several alignment dots)
 - Had only used the losartan for 3 weeks
 - Returned 3 weeks later
 - Base lens was allowed to stabilize – aberrometry was performed; significant HOAs were quantified
 - HOA corrected lens was ordered
 - Patient returned 3 weeks later
 - HOA correcting lens improved vision to 20/25+2
 - Patient reported improved vision and a reduction in the HOAs was objectively determined
 - Patient still not satisfied – vision was limited by the corneal haze
- Returned 5 months later
 - Satisfied with vision when he wears the scleral lens, but does not wear it due to ocular surface sensitivity
 - Corneal tomographer densitometry value in Jan 2025 = 49.1; August 2025 = 40.1
 - Objective reduction in corneal scatter – likely due to the losartan

Case 1- Ectodermal dysplasia and herpes zoster keratitis

- Introduction: Ectodermal Dysplasias
 - Genetic conditions affecting development of skin, hair, teeth, nails, and sweat glands
 - Ocular findings: lacrimal drainage obstruction and hypoplasia, punctal agenesis, distichiasis, trichiasis, meibomian gland alterations and ankyloblepharon with sequelae of chronic dry eye
 - Complications: chronic ocular pain, neurotrophic keratitis, and corneal opacification
- Presenting case
 - Patient presented for dry eye and scleral lens consultation

- Habitual scleral lenses show inadequate fit & corneal touch
- History of ectodermal dysplasia with malformation of nasolacrimal ducts OU, and herpes zoster keratitis OU with resultant scarring
- Review entrance testing and external examination
- Discuss pertinent findings of slit lamp exam
- Discuss pertinent findings of fundus examination
- Review differential diagnoses
- Discuss management plan including contact lens selection based on exam findings
- Review Treatment and follow-up
 - Quadrant specific scleral lenses with a larger diameter and increased central clearance, to be used in conjunction with autologous serum tears
 - After 2 months of wear, corneal punctate staining fully resolved and patient reported improvement in comfort
 - 6 months later, custom, impression-based scleral lenses further improved patient comfort, and reduced ocular inflammation & neovascularization

Case 2 – Profilometry Guided Scleral Lenses for High Corneal and Scleral Toricity

- Introduction
 - Utilization of corneo-scleral profilometry can supplement the traditional process of scleral lens fitting with diagnostic fitting sets, particularly for patients with corneal and scleral irregularities. This technology may help provide a best-fit lens that matches the ocular surface to improve patient outcomes.
- Presenting Case
 - A patient was referred for a specialty contact lens evaluation.
 - Corneal tomography and refractive data showed 8 diopters of corneal and refractive astigmatism.
- Review differential diagnoses
 - Tomography did not reveal significant pathology consistent with high astigmatism.
- Discuss management plan including contact lens selection based on exam findings
 - Based on previous history and the patient's goals, scleral lenses were determined to be the best vision correction option.
 - The patient was fit in-office with several large diameter diagnostic scleral lenses.
 - However, none of the lenses would remain inserted on the eye, even with advanced customizations.
 - After several modifications, corneo-scleral profilometry was performed and revealed over 1200 microns of sagittal height difference between the major meridians.
- Review treatment and follow up
 - A profilometry guided scleral lens was designed for improved scleral alignment and the patient achieved enhanced vision and comfort.
 - Additional considerations were made to lens material, fill solutions, and disinfecting solutions to minimize fogging.

Case #1: Scleral Lens to the Rescue! A Case of a VERY Persistent PED

1. 50-year-old Hispanic female
 - a. KCN – diagnosed at age 16
 - b. PKP OD 3 years ago, OS 5 years ago
 - c. Type 2 DM x 10 years
 - d. New diagnosis of Sjogren's syndrome x 6 months
 - e. Scleral lens wearer x 1 month
2. Reports extreme light sensitivity after OD lens removal 2 weeks prior
 - a. Went to urgent care the next morning – was told she had a corneal abrasion and instructed to use PF ATs several times per day but not getting better
3. Diagnosis
 - a. Persistent Epithelial Defect OD
 - i. First line treatment
 1. PF ATs and gel qhs
 2. BCL
 3. RTC every 2-3 days with minimal improvement after 2 weeks
 - ii. Second line treatment
 1. Cryopreserved membrane
 - a. Promotes healing: Scaffold + growth factors speed epithelial closure.
 - b. Anti-inflammatory / anti-scarring: Downregulates cytokines, reduces haze.
 - c. Pain relief: Acts as a biologic bandage, improves comfort.
 - d. Prevents recurrence: Especially effective in RCE and PEDs.
 - e. Protects surface: Shields from desiccation, melt, and trauma.
 - f. Practical use: In-office application, compatible with other therapies.
 2. Complete healing after 5 days
 - iii. Considered Oxervate
 1. First FDA-approved treatment for neurotrophic keratopathy (2018).

Case #2: Too Late to Turn Back: The High Myope I Wish I'd Met Sooner

1. 16-year-old African American male, first visit to clinic
 - a. Glasses since age 7, no prior myopia management
 - b. SCLs since age 11
 - c. Family hx: mother -9.00 D (retinal detachment), father -6.50 D
 - d. Referred by friend on baseball team who wears ortho-k
2. Exam Findings
 - a. Refraction: -9.25 D OD / -9.00 D OS

- b. Axial length: 27.5 mm OU
 - c. Fundus: Myopic macular changes, lacquer cracks
- 3. Parents desperate to make up for lost time
 - a. Is it too late?
 - i. EVERY DIOPTER MATTERS
 - b. Options
 - i. Ortho-k
 - 1. Possible partial treatment?
 - ii. Soft contact lenses
 - 1. FDA approved option doesn't come in his Rx
 - 2. Must use off-label multifocals
 - a. Monthly vs. daily disposable
- 4. Opted for daily disposable MF
 - a. Progression slowed drastically over next 3 years
 - b. Impact of myopia control vs. age-related slow down
- 5. Why Memorable
 - a. Classic *missed opportunity* for early intervention
 - b. Already showing **pathologic myopia signs** at 16
 - c. Parents ask: "*Why weren't we told sooner?*"
 - i. Delicate conversation
 - ii. Focus on what CAN be done vs. what SHOULD have been done in the past