SECO Contact Lens Summit – The CL Journal Club
(2 hours)

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Course description:
In the past, Journal clubs are where colleagues share the findings from current and past print publications. Join our experts sharing insights gained from digital and print publications, articles, studies and social media that has enormously influenced their own CL fitting and management philosophies.

Learning Objectives:
- Review key findings from recent contact lens publications
- Apply current literature to clinical contact lens decision-making
- Evaluate the impact of social media on contact lens practice trends
- Compare evolving and traditional contact lens fitting philosophies
- Integrate research into practical contact lens management strategies
- Develop skills to curate relevant clinical content from multiple sources

Introduction (10min)

1. **Gomes J AP, Tan D, Rapuano CJ, Belin MW, Abrosio R, Guell JL, Malecaze F, et al. *Global Consensus on Keratoconus and Ectatic Diseases.* Cornea. 2015 Apr;34(4):359-69.**
    a. Why was this memorable?
        i. There was lack of consensus on how to diagnose and manage keratoconus and corneal ectatic diseases. The advent of corneal tomography has increased the ability to diagnose disease at a much earlier stage.

ii. This paper came to the consensus for the mandatory findings to diagnose keratoconus and on how to define ectasia progression.

b. What did I learn?
    i. Corneal tomography is much more sensitive and specific for diagnosis and management of keratoconus and corneal ectasia compared to corneal topography.
    ii. The previously accepted 1/2000 prevalence of keratoconus is outdated. It is now accepted to be much higher, particularly when evaluating more recent publications.
    iii. Central pachymetry is one of the least reliable indicators of keratoconus.

c. Practical Tips
    i. When managing corneal pathology, particularly for early diagnosis and monitoring of progression, corneal tomography, *not* topography is essential.
    ii. It's important to monitor for KC progression based on age.
        1. This is particularly important for insurance documentation for corneal crosslinking approval.
        2. The younger the patient, return to clinic more often.

2. Walker MK, Bailey LS, Basso KB, Redfern RR. *Nonpolar lipids contribute to midday fogging during scleral lens wear.* Invest Ophthalmol Vis Sci. 2023 Jan 3;64(1):7.

a. Why was this memorable?
    i. Midday fogging (MDF) is a commonly reported problem in scleral lens wearers and has been reported to be as high as 56% and may contribute to blurry vision and unknown physiological effects to the ocular surface.
    ii. The scleral lens fluid reservoir ranges from 100-1000 microns in depth depending on the condition for which scleral lenses are fit.
    iii. There is a lack of understanding and consensus among what contributes to MDF, however this study demonstrated that nonpolar lipids likely contribute to MDF.

b. What did I learn?
    i. Midday fogging with scleral lens wear is a poorly understood phenomenon that likely has multiple factors contributing to its occurrence.
    ii. Nonpolar hydrophobic lipids contribute to MDF in addition to epithelial cells, proteins, inflammatory markers and debris.

c. Practical Tips

i. It is beneficial to proactively discuss MDF with SL patients along with troubleshooting options for managing MDF.
ii. Multiple factors likely contribute to subjective reports of midday fogging with SL wear and may not be due to the SL fit alone.
iii. Proactive aggressive management of ocular surface disease is necessary to minimize MDF.
iv. Use of AS-OCT can be helpful in determining severity and type of debris in the SL FR in patients who complain of MDF.

3. **Ravichandran S, Pucker AD. *Comparing meibomian gland visibility on optical coherhence tomography and Keratograph 5M images using objective and subjective grading methods.* Cont Lens Anterior Eye. 2024 Jun;47(3):102162.**
    a. Why was this memorable?
        i. The signs and symptoms of dry eye disease do not always correlate.
        ii. Many patients with severe ocular surface disease or corneal irregularity need to wear specialty contact lenses for visual improvement and/or ocular surface rehabilitation.
        iii. Utilizing multiple instruments for examination during specialty lens fitting can be time consuming for the practitioner and patient.
        iv. Both the Keratograph 5M and AS-OCT were able to image the meibomian glands of the upper and lower eyelids in this study.
        v. The OCT (longer wavelength) imaged longer MGs compared to the Keratograph 5M.
    b. What did I learn?
        i. Traditionally, meibography has been performed in our clinic on a separate instrument, the Keratograph 5M. This has decreased exam flow efficiency and productivity during times of high clinic volume.
        ii. Being able to utilize AS-OCT to image the meibomian glands has improved clinic efficiency and has also improved patient management for both contact lens and non-contact lens wearers.
    c. Practical Tips
        i. Meibography is beneficial to perform for both symptomatic and asymptomatic patients, including contact lens wearers to help with management.
        ii. Utilizing AS-OCT to image the meibomian glands can be very useful, particularly in scleral lens patients.

1. ***Breakthrough CooperVision MiSight® 1 Day Contact Lens for Childhood Myopia Coming to the United States in 2020 | CooperVision***
    a. Why was this memorable?
        i. This news release changed the trajectory of myopia control in my practice
        ii. Up to this point, only off label options were available for managing myopia patients
            1. Ortho-keratology
            2. Atropine
            3. Soft bifocals
    b. What did I learn?
        i. The FDA stamp signaled: "This is real, evidence-based, and safe for kids."
        ii. It validated years of clinical trial work and energized the profession—pushing practices, manufacturers, and educators to prioritize myopia management.
    c. Practical Tips
        i. Lead With FDA-Approval in Parent Conversations
            1. Parents gain confidence when you say: "This is the first and only FDA-approved soft contact lens for slowing myopia progression in children."
            2. Position it as a validated medical treatment, not just another contact lens.
        ii. This lens is a great entry point into myopia management
            1. Fit just like any other soft lens
            2. No special equipment required to get started
2. ***Therapeutic uses of scleral contact lenses for ocular surface disease: patient selection and special considerations - PMC***
    a. Why was this memorable?
        i. This publication systematically reframed scleral lenses as therapeutic rather than purely optical devices—a turning point in how many of us perceive and discuss their role.
        ii. It compiled evidence supporting scleral use in conditions like Sjögren's syndrome, graft-vs-host disease, exposure keratopathy, neurotrophic keratitis, and persistent epithelial defects—broadening their clinical scope.
    b. What did I learn?
        i. That scleral lenses offer a customizable, protective, and therapeutic environment—especially valuable in severe ocular surface disease.

ii. To shift from viewing scleral lenses solely as tools for corneal irregularities to front-line treatment devices in OSD, often with medical justification and coverage.
iii. That such evidence-based positioning empowers us to communicate the real, functional benefits of sclerals to patients and insurance partners alike.

c. Practical Tips
    i. Broaden Your Scleral Lens Indications
        1. Beyond keratoconus, seriously consider sclerals for Sjögren's, exposure keratopathy, neurotrophic keratitis, and other OSDs.
    ii. Emphasize Therapeutic Value
        1. Position sclerals as a medical treatment, not just for refractive correction—this can aid in discussions with insurance or referring physicians.

3. ***How We Made Contact Lenses a Million Dollar Business in Our Practice - Review of Optometric Business Maximize Your Optometry Practice: Proven Strategies for Contact Lens Management Success***
    a. Why was this memorable?
        i. First time I saw contact lenses framed as their own business unit, not just a service line.
        ii. Showed that metrics and accountability could transform profitability without sacrificing patient care.
        iii. Emphasized the importance of staff ownership and structure — giving someone the role of "Contact Lens Manager."
        iv. Validated that small, consistent process changes (tracking capture rate, educating patients, leveraging automation) can yield million-dollar results.
    b. What did I learn?
        i. That clinical excellence alone isn't enough — structured business systems are critical to maximize the impact of contact lenses in practice.
        ii. Delegating and empowering staff creates more consistency than the doctor doing it all.
        iii. Tracking and reviewing specific, actionable metrics (like annual supply rate, daily disposable uptake) keeps the team aligned and motivated.
        iv. A strategic business mindset can transform a "steady" contact lens department into a true growth engine
    c. Practical Tips

i. Appoint a CL Manager – assign accountability for metrics, training, and strategy.
ii. Track the Right Numbers – e.g., evaluations vs. refractions, daily disposable percentage, annual supply sales, in-house capture rate.
iii. Educate & Sample – show patients new options, provide daily disposable trials, and use quoting tools to present annual supply value.
iv. Automate Follow-Ups – use digital systems to capture orders after hours and reduce patient leakage.
v. Review Regularly – monthly metric check-ins and quarterly strategy sessions keep momentum.

1. ***The Incidence of Contact Lens–Related Microbial Keratitis in Australia. Stapleton, Fiona et al. Ophthalmology, Volume 115, Issue 10, 1655 – 1662***

Reasons this article was so impactful:

A) With silicone hydrogels being introduced to the CL market in 1999-2000 there was a prevailing thought that contact lens microbial keratitis incidence would decrease – due to superior oxygen transmissibility of these lenses.
B) The seminal paper on CLMK incidence was published in 1989 – Poggio and Schein with an incidence rate of 20.9 per 10,000 wearers in overnight lens wearers. (N Engl J Med. 1989 Sep 21;321(12):779-83)
    a. This was the commonly referenced incidence rate used between 1989-2008
    b. In 2008, out of Australia, another large epidemiological study was published which included data on those wearing silicone hydrogels
        i. For overnight lens wear the incidence of MK was
            1. 19.5 per 10,000 for soft CL wearers
            2. 25.4 per 10,000 for overnight silicone hydrogels
        ii. Though not statistically different, the incidence rate of MK was exactly the same as 1989
            1. The use of silicone hydrogels did not reduce the incidence rate of CLMK
            2. Overnight wear was higher risk than daily wear
        iii. Effects on Patient Care
            1. Alternate mechanisms of CLMK needed to be discovered
                a. Likely helped influence more adoption of daily disposable lens wear
            2. Continue to heed caution with overnight lens wear

Article 2:

2. ***Sweeney DF, Jalbert I, Covey M, Sankaridurg PR, Vajdic C, Holden BA, Sharma S, Ramachandran L, Willcox MD, Rao GN. Clinical characterization of corneal infiltrative events observed with soft contact lens wear. Cornea. 2003 Jul;22(5):435-42. doi: 10.1097/00003226-200307000-00009. PMID: 12827049***

Reasons this article was so impactful for me:

A) In school learning about infiltrative events, such as contact lens peripheral ulcers, was frustrating. Particularly about how to diagnose and treat them.
    a. Frequent antibiotic dosing
    b. Combination steroid / antibiotic

B) This article was beyond my knowledge level at the time and I didn't appreciate the nuanced significance until I was in practice for a period of time.
    a. We were presented with
        i. CLARE
        ii. CLPU
        iii. IK
        iv. BK
    b. As my career progressed I worked at a higher education student health center and I became a member of the Contact Lens Assessment in Youth Study team. At the health center we regularly experienced the conditions listed above in addition to one that was introduced to the literature in the 2010s:
        i. CLAIK
    c. Research provides a some insight for how these infiltrative events manifest
        i. CLPU – often hypoxia or *Staph* related
        ii. CLARE / CLAIK – often associated with Gram negative species and the infiltrative response is significantly different than CLARE
    d. Lastly, as daily disposable lenses have increased in market share, the frequency of seeing infiltrative events has gone down significantly in our clinics. Single use lenses are:
        i. Objectively associated with lower risk of CIEs
    e. I was always interested in infiltrative responses and those conditions ended up being much of my career to date both in my clinical and research experience.

Article 3:

3. ***Eye and Contact Lens July 2011 – Volume 37 (Issue 4) Special Issue on Ultraviolet Radiation and Its Effects on the Eye***

I have always found topics on ultraviolet radiation, infrared radiation, and laser-tissue interactions very interesting. This issue covered several topics, many of which have influenced my career in practice teaching, and professional service activities.

A) This special issue covered topics on UV related public health concerns, UV-induced immunosuppression, Ozone depletion and UV radiation ocular effects, UV at altitude, phototoxicity to the retina, cataract, and ocular surface.

B) How this influenced my career:

a. As a contact lens fitting practitioner, selecting materials that have UV blocking or filtering capabilities is regularly one of the factors for prescribing lenses.
    i. Options include single use, two-week, monthly options from a variety of manufacturers and are good considerations for those regularly outdoors, climbers, and those on the water

b. Teaching – I regularly discuss radiation in an ophthalmic laser course that I am instructor of record in and in a contact lens course

c. As a member of the ASC-Z80 standards committee
    i. There are concerns about long term, or cumulative, effects of UV on the retina
    ii. In the last several years, the concern is not just UV but also violet-blue light
        1. Inconclusive, very difficult to objectively study
    iii. The Spectral Bands Task Force (ASC Z80 subcommittee) came to consensus on a new classification scheme to better direct patients, practitioners, regulators, and legislators on what devices are actually doing: (OVS 2024, 101(4))
        1. HEV – 1 (380 nm to 400 nm)
            a. Contested range that is historically considered UV by health organizations, but visible by lens manufacturers
        2. HEV – 2 (400 nm – 455 nm)
            a. Includes the peak of the blue light hazard
        3. HEV – 3 (455 nm – 500 nm)
            a. Lower energy wavelengths but documented to be capable of damaging photoreceptors – with the right conditions
        4. Contact lenses
            a. Some marketed lenses are using this scheme to label their products

Q&A / Discussion