CXL CO-MANAGEMENT AND CLINICAL PEARLS

Avedro gathered leading refractive surgeons and eye care professionals for a roundtable discussion during the 2018 annual meeting of the American Society of Cataract and Refractive Surgery in Washington, DC. The discussion centered around the co-management of keratoconus patients with your optometric network, as well as corneal cross-linking (CXL) clinical pearls.

BRANDON D. AYRES, MD
- Surgeon on the Cornea Service, Wills Eye Hospital, Philadelphia
- Financial disclosure: Consultant (Avedro)

KATHRYN M. HATCH, MD
- Director, Refractive Surgery Service, Massachusetts Eye and Ear; Site Director, Massachusetts Eye and Ear, Waltham, Massachusetts; Assistant Professor of Ophthalmology, Harvard Medical School, Boston
- Financial disclosure: Consultant (Avedro)

RICHARD L. LINDSTROM, MD
- Founder and Attending Surgeon, Minnesota Eye Consultants, Minneapolis, Minnesota
- Financial disclosure: Consultant (Avedro)

RAJESH K. RAJPAL, MD
- Founder, See Clearly Vision Group Tysons Corner, Virginia
- Financial disclosure: Chief Medical Officer, Avedro

IMPORTANCE OF EARLY DIAGNOSIS AND TREATMENT

Richard L. Lindstrom, MD: Now that we have an FDA-approved treatment for patients with progressive keratoconus, it is crucial that we educate diagnosing providers on the importance of early diagnosis and treatment to give patients the best chance for a good outcome.

Kathryn M. Hatch, MD: I completely agree. Another key component of early detection is having proper screening tools and more widespread use of such tools. Not all eye care providers have Placido-based corneal topography, and they are even less likely to have tomography. We need to educate diagnosing providers, as well as pediatricians, regarding early screening and detection so they can refer patients early. Doctors who will monitor and manage keratoconus patients, most likely cornea-trained ophthalmologists, will have these technologies in their practices. Other eye care professionals need to understand the importance of screening and sending to corneal specialists early, so patients can have the proper intervention.

DEFINING PROGRESSIVE KERATOCONUS

Dr. Lindstrom: CXL is approved for treating progressive keratoconus, but the FDA did not define that term. Dr. Ayres, how do you determine if a patient has progressive keratoconus?

Brandon D. Ayres, MD: Identifying progressive keratoconus is extremely important. We do not want to delay treatment until the cornea becomes too thin to cross-link.

I examine the patient's history thoroughly. I ask about last year's eyeglass prescription and how fast the patient's vision is changing. If a patient has had to change eyeglasses four times in one year, for example, the keratoconus is clearly progressing.

I also use sensitive diagnostics, such as tomography and topography, to examine the posterior cornea. I look at the pachymetry and the posterior float maps, which may show early signs of progression or corneal ectasia following refractive surgery. Anything that I believe shows the disease is worse now than it was six months or a year ago is enough for me to document progressive keratoconus.

Dr. Lindstrom: We also need to counsel patients on what outcome they can expect from CXL. How are you doing this in your practice?

Dr. Ayres: I tell patients the best I can do right now is maintain the status quo. I explain the goal of this treatment is to prevent progression, so they will not need more invasive surgery such as a corneal transplant in the future.

Dr. Lindstrom: That usually means patients will resume wearing eyeglasses or contact lenses, whatever type of vision correction they wore before the procedure, and they will return to their diagnosing provider for long-term care.

Dr. Ayres: Exactly. I tell patients we take a team approach. I do my best to stop this process from worsening by performing the CXL procedure, and their diagnosing provider will optimize their vision.

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MINIMUM CORNEAL THICKNESS

Rajesh K. Rajpal, MD: Because some corneal thinning may occur during the Photrexa Viscous loading phase, pachymetry is measured prior to initiation of UV light.[1] What is your process for using Photrexa to thicken the cornea?

Dr. Ayres: The cornea should be 400 microns before you turn on the KXL UV light, and you can expect some thinning during the Photrexa Viscous portion of the procedure. Photrexa is used to thicken the cornea to reach the minimum thickness, and it is instilled at 5- to 10-second intervals until the corneal thickness increases to at least 400 microns. We allow patients to close their eyes between Photrexa drops to facilitate this thickening.

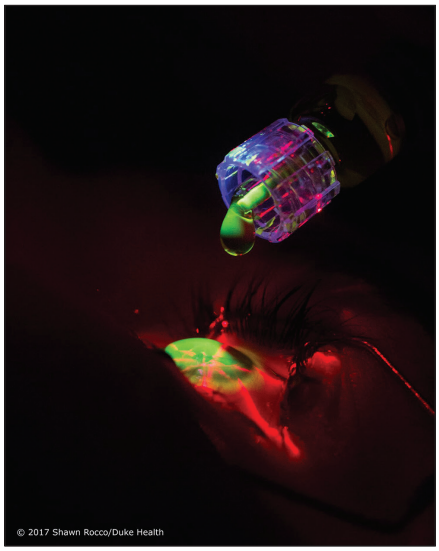
CLINICAL PEARLS

Dr. Rajpal: Please share some clinical pearls related to the healing process and/or additional postoperative considerations.

Dr. Lindstrom: The critical issue is to promote re-epithelialization, which usually requires lubricants, a bandage contact lens, and careful follow up.

Dr. Hatch: Haze is a normal healing response of the cornea and is expected. It does fade with time.

Also, we know patients with keratoconus are often excessive eye rubbers. We should talk with them about this habit and suggest antihistamine therapy to help alleviate the itch. I explain to patients that we can perform the CXL procedure, but if they continue to rub their eyes, their disease can progress in spite of the treatment. CXL is not a cure for the condition, and therefore, continued monitoring is required.



Corneal cross-linking procedure.

CO-MANAGEMENT WITH DIAGNOSING PROVIDERS

Dr. Rajpal: What do you tell your patients to expect following the CXL procedure, specifically about their relationship with their primary eye care provider?

Dr. Hatch: I tell patients they will continue to see their primary eye care providers as before, but during the first two weeks after CXL, they will see me. This is assuming the eye care provider is comfortable monitoring the condition. Once the eye is healed, typically six weeks to three months after CXL, I send patients back to their optometrists for contact lens fitting or spectacle correction.

Dr. Lindstrom: In most communities, corneal surgeons have the equipment for CXL, and we are cooperatively managing patients with other diagnosing physicians. Our job is to educate them regarding which patients they should refer to us and what we will be doing. Dr. Ayres, how do you do this in your practice?

Dr. Ayres: Patients used to be sent to us when they had progressed to the point of needing a corneal transplant. We need to change that mindset among eye care providers in the community. We are working to spread the word that we want to see their patients early to track progression because we now have an FDA-approved procedure for progressive keratoconus and corneal ectasia following refractive surgery. Our message is: "We want to see your patients when keratoconus is first diagnosed, not after you have tried multiple contact lenses and you think the patient might need a corneal transplant."

We are having more success getting CXL covered by insurance, so it is no longer a financial issue for most patients. We want to see them early, treat them, and send them back to their diagnosing physician for the remainder of their refractive treatment. CXL has changed the algorithm that we use for eye care providers in the community and specialty practices in treating progressive keratoconus. ■

1. Rosenblat E, Hersh PS. Intraoperative corneal thickness change and clinical outcomes after corneal collagen crosslinking: Standard crosslinking versus hypotonic riboflavin. *J Cataract Refract Surg.* 2016;42(4):596-605.