Ophthalmology MANAGEMENT

Article

Know your tools, help your patients

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LOOKING BEYOND NORMAL

Reconciling dry eye disease and overtearing with a normal tear osmolarity.

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This was not the most straightforward case of dry eye I had treated.

The 57-year-old woman, a soft contact lens wearer for many years, had come to our practice with complaints of overtearing in both eyes, and also burning and mild itching. Her other pertinent medical history is significant for ulcerative colitis and lichen planus, which she said had been in remission for some time, and mild rosacea.

As for medications not related to dry eye, she was taking minocycline, valacyclovir, levothyroxine sodium and simvastatin. And for dry eye, she had been treated with erythromycin ointment; TobraDex (tobramycin and dexamethasone, Alcon); Lastacaft, (alcaftadine ophthalmic solution, Allergan); Restasis (cyclosporine ophthalmic emulsion, Allergan); and Lotemax (loteprednol etabonate ophthalmic suspension, Bausch + Lomb). Some helped, others didn't, and whatever relief she did receive was temporary.

I looked at her meibomian gland function. There was mild truncation and congestion, but overall, there was good meibomian gland architecture. I discerned mild meibomian gland damage. We also performed other tests (**Figure 1, page 31**).

My diagnosis: a complex, mixed-mechanism dry eye disease with multiple factors. These were:

- Autoimmune history: lichen planus, ulcerative colitis
- SCL wearer
- Rosacea
- Postmenopausal female
- Conjunctivochalasis
- Mild to moderate MGD

The interesting point in this case is the role of tear osmolarity. The patient's score was 296 and 302, both within the normal range. But, overtearing could be compensatory and/or an outflow issue. Also, meibomian gland dysfunction or conjunctivochalasis could be the leading cause or causes of this patient's disease.

TREATMENT

I started the patient with a lid hygiene program of AzaSite (Akorn) in both eyes at bedtime to treat the mild MGD. She was to continue the minocycline and start HydroEye (ScienceBased Health) and scheduled a six-week follow-up appointment. In follow-up, while the tearing persisted, the burning, redness and itching had improved by 50%. The osmolarity readings were 296 and 295.

A probe and irrigation of the punctae in all eyelids showed no nasolacrimal obstruction or stenosis. An allergy panel was negative. I modified the treatment plan to include a conjunctival chalasis repair with cautery and inferior punctoplasty of both eyelids.

One month after the conjunctival chalasis repair and punctoplasty, the patient was very satisfied. She said she only had occasional tearing and overall, her symptoms were low and her SPEED questionnaire score was 5 — down from 15. Her longterm treatment regimen was to continue HydroEye and use Azasite biweekly.

This clinical scenario is not unlike ones that we evaluate as clinicians daily, and patients more often than not have several risk factors and causes for their ocular surface disease. A tear osmolarity within normal range in DED patients can occur in lower severity meibomian gland dysfunction, conjunctival chalasis, epithelial basement membrane dystrophy or allergic conjunctivitis.

These objective data helped me provide a more targeted treated plan so I could make recommended interventions earlier on, instead of starting and layering with different Rx drops and lubrication.

SPEED	15
Recent autoimmune panel	RF elevated only ANA, SS-A, SS-B, CRP negative Sjo panel negative
Tear osmolarity	296, 302
Lids	Meibum 2+ thick OD, 1-2+ thick OS Minimal telangiectasis
Conjunctiva	1-2+ conjunctivochalasis
Cornea	No corneal staining

Figure 1. Objective diagnostics that review both signs and symptoms are important to "put it all together" in complex OSD patients. This patient demonstrates significant OSD symptoms with elevated SPEED score, MGD and CCH. In the setting of a normal tear osmolarity, targeted interventions to the MGD and CCH will likely be more beneficial to this patient's care.

About the Author

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Disclosure: Dr. Yeu has financial relationships with Alcon, AMO and Bausch + Lomb. She consults for TearScience and TearLab.

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