AN EYE CENTRAL CASE REPORT

A Case of Severe Dry Eye Disease with Keratitis

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Abstract

Dry eye disease is a multifactorial disease of the ocular surface resulting from an unstable tear film, meibomian gland dysfunction, and autoimmune or systemic conditions such as rheumatoid arthritis and diabetes. Treatment varies depending on the underlying cause and may include immunomodulators, heat-based therapy for gland dysfunction, lubricating drops, biologics such as amniotic membranes, and specialized contact lenses that function as a reservoir system. This report discusses the care process of a patient with severe ocular surface disease, covering diagnosis, treatment, and management at Eye Central.

Keywords: Keratitis, Dry Eye Disease, Meibomian Gland Dysfunction, Cornea, Ocular Surface Disease

Introduction

Dry eye disease significantly affects ocular health, patient comfort, and overall quality of life. The tissues most commonly involved include the cornea, meibomian glands, lacrimal glands, and eyelids. Symptoms experienced by affected patients range from dryness and watery eyes to light sensitivity, a sandy or burning sensation, and pain. When inflammation is inadequately managed, dry eye disease can progress to corneal ulcers, neuropathies, and eventual vision loss. Accurate identification of the dry eye subtype and the use of appropriate management strategies are therefore essential in the care of patients affected by this disease.

Case Report

Initial Visit: June 2, 2026

A 38-year-old female presented to Eye Central for the first time with a one-week history of watery eyes, ocular discomfort, light sensitivity, and moderate pain. She also reported difficulty keeping her left eye open due to irritation and sensitivity. She has a known history of dry eye disease and is a contact lens wearer with no reported history of complications from lens wear. Systemic history was

unremarkable. She was not on any medications, and there was no history of pregnancy, drug use, or tobacco use.

The patient reported visiting the Emergency Room two days prior, where topical tobramycin eye drops were prescribed; however, these did not provide symptom relief, prompting her to book an appointment at our clinic. Her last comprehensive eye examination was over one year ago, at which time she was issued an updated prescription for glasses and contact lenses and was advised to use lubricating drops for dry eyes.

Clinical Findings

On examination, distance visual acuity with glasses was **20/30 OD and 20/60 OS**. Pupils were equal and reactive to light and accommodation, with no afferent pupillary defects noted. Anterior chamber angles were wide open (Van Herick grade III, OU). Ocular motilities were full, and no confrontational visual field defects were observed.

Slit-lamp biomicroscopy revealed 3+ superficial punctate keratitis (SPK) in the right eye and 4+ (severe) SPK in the left eye. Tear film break-up time (TBUT) was 3 seconds in both eyes (normal >5 seconds), with 1+ conjunctival injection bilaterally. The anterior chamber was quiet with no cells or flare observed. Intraocular pressure was 16 mmHg OD and 17 mmHg OS at 2:13 PM.

Diagnosis and Management

A diagnosis of severe keratitis secondary to chronic dry eye disease was made, with subtypes of meibomian gland dysfunction and tear film instability identified in both eyes. The following management plan was initiated:

- Tobradex (tobramycin/dexamethasone 0.3%/0.1%) ophthalmic drops: 4 times daily (OU) for week 1, tapered to 3 times daily in week 2, twice daily in week 3, and once daily in week 4.
- A bandage contact lens was inserted in the left eye for immediate relief, with instructions to remove it after 24 hours.
- Warm compress therapy was recommended twice daily to improve meibomian gland function.

A follow-up appointment was scheduled for two weeks later.

Differential Diagnoses Considered

Anterior Uveitis: Ruled out due to a quiet anterior chamber in both eyes, confirming the absence of uveal inflammation.

Corneal Foreign Body: Sodium fluorescein staining revealed a diffuse punctate pattern consistent with inflammatory corneal changes secondary to dryness, rather than mechanical trauma from a foreign body. The conjunctival fornices were assessed and were clear.

Corneal Ulcer: Eliminated clinically. Sodium fluorescein staining showed no evidence of ulceration despite the presence of pain and photophobia.

Second Visit: June 16, 2026

The patient returned for her scheduled follow-up in a noticeably more comfortable and relaxed state. All symptoms had resolved, and visual acuity had been fully restored. She reported excellent compliance with the prescribed drop regimen and the recommended warm compress therapy. At this visit, she was on twice-daily dosing of Tobradex and four times daily instillation of preservative-free lubricating drops. The bandage contact lens had been removed the day following the initial visit as instructed.

Visual acuity at the follow-up visit was **20/20 in both eyes**. Slit-lamp examination revealed only trace punctate corneal staining bilaterally, with no conjunctival redness. Tear film break-up time had improved to 7 seconds in both eyes, with no anatomical concerns identified.

The patient was advised to continue the anti-inflammatory drop regimen until completion of the recommended course in two weeks. She was also encouraged to maintain warm compress therapy as ongoing care for her meibomian glands, and to continue preservative-free lubricating drops 2 to 3 times daily.

Discussion

The Tear Film and Ocular Surface Society (TFOS), the leading body in dry eye research, released the 2025 DEWS III report (Dry Eye Workshop III), the most current classification and management guideline for dry eye disease. This report updated the definition of dry eye to: "A multifactorial, symptomatic disease characterized by a loss of homeostasis of the tear film and/or ocular surface, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abnormalities are etiological factors."

Dry eye disease has also been reclassified into three subtypes: tear film component deficiencies, eyelid anomalies, and ocular surface abnormalities, replacing the previous two-component classification. Females are disproportionately affected, in part due to hormonal differences. Systemic diseases such as rheumatoid arthritis, Sjögren's disease, and diabetes have also been implicated, as have surgical procedures including refractive and cataract surgery.

Management is guided by subtype and clinical severity. Options range from lubricating drops and immunomodulators to oral anti-inflammatory agents (e.g., doxycycline), punctal plugs, heat- and light-based therapies such as IPL (intense pulsed light) and RF (radiofrequency), and ocular surface regenerators including blood-derived products and amniotic membranes. Most mild-to-moderate cases respond well to conservative therapy; advanced or chronic disease may require combined

strategies or surgical intervention. Routine follow-up with an experienced eye care provider is essential for maintaining ocular health and preventing disease progression.

Conclusion

With growing insight into the pathophysiology of dry eye disease and continuous advances in treatment, a wide spectrum of effective management options is now available. Regardless of cause, chronicity, or treatment history, strategies exist to meaningfully improve quality of life and reduce the debilitating effects of ocular surface inflammation and structural changes. Early intervention and consistent follow-up remain the cornerstones of optimal care.

What This Means for You

Dry eye disease is more than occasional dryness. It is a chronic condition that can significantly affect your vision and daily comfort if left untreated. The good news is that it is highly treatable. At Eye Central, we take a thorough approach to identifying the specific type of dry eye you have and tailoring a treatment plan to your needs.

Common symptoms to watch for include burning, watery eyes, light sensitivity, blurry vision, and a gritty or sandy feeling. If you experience any of these, we encourage you to book an appointment. With the right care, most patients experience meaningful relief and a full return to comfortable, clear vision.

Reference

Victor L. Perez et al. TFOS DEWS III: Executive Summary. American Journal of Ophthalmology, February 2026, p. 144.