WHEN IT'S *NOT* OCULAR ALLERGIES

Allergies may be the easy answer, but it pays to make the effort to diagnose and treat patients correctly.

BY LESLIE O'DELL, OD, FAAO

Patients with ocular allergy sometimes underreport their symptoms, thinking their chronic irritation is normal. These same patients may self-diagnose with ocular allergy when in reality another condition is present. Over-the-counter (OTC) options for treating ocular allergy are readily available, making it tricky for eye care providers to uncover the true cause of symptoms when the patients is in our chair.

This article reviews signs and symptoms of ocular allergy that are shared with other ocular and systemic diseases and explores other reasons patients may be experiencing these symptoms. A careful examination and history can help the clinician to shed light on the causative problem and bring relief to patients who are often frustrated after exhausting OTC options.

CLINICAL SYMPTOMS

Patients with ocular allergy may have itching, eyelid swelling, redness, and watering, but these same symptoms can also be indicative of other ocular surface disease, mainly dry eye disease (DED). In fact, in patients with complaints of itchiness, dryness, and redness, more than 50% of patients have both ocular allergy and DED.[1]

Itching

In a true allergic immunoglobulin E (IgE)–mediated response, rubbing will worsen an itching sensation rather than providing relief. Ask the patient if rubbing his or her eyes when they itch helps or worsens the symptom. If rubbing provides relief, then differentials such as DED, meibomian gland dysfunction (MGD), and blepharitis are likely causes.

Next, find out whether it's the patient's eye or eyelid that itches. With allergy, it is common for the itching sensation to be more intense in the nasal canthal region. When the itch is located near the base of the eyelash, blepharitis and *Demodex* blepharitis should be ruled out. Contact blepharoconjunctivitis (CBC), a non-IgE–mediated allergic contact dermatitis of the eyelid or even conjunctival tissues, is caused by exposure to toxins from common products such as cosmetics, eyedrops, and metals.[2] CBC also tends to affect middle-aged women,[3] which is the most common demographic for DED.[4]

Eyelid Swelling

The eyelid has the thinnest skin on the body, making it susceptible to swelling. The location, coloration of the skin, and duration of the swelling are all important to note when narrowing your diagnosis. With allergy the eyelid can swell quickly, resulting in angioedema. Infectious conditions, which are at times urgent (ie, preseptal cellulitis), can present with warm, red, painful swelling. Hordeolum and chalazion also present with eyelid swelling, but these are a more localized rather than diffuse swelling.

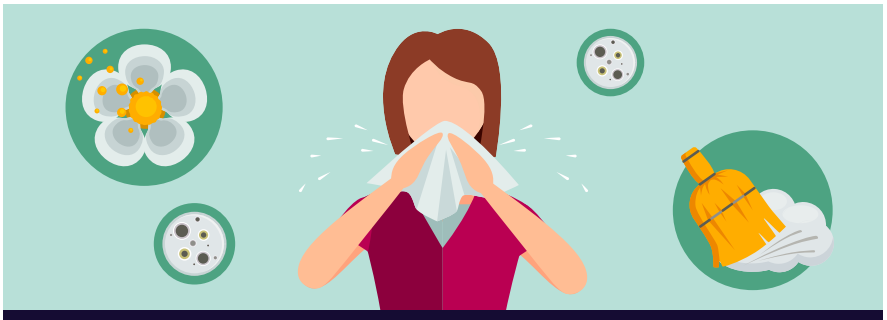
Redness

Redness is the hallmark sign of inflammation. In atopic keratoconjunctivitis, patients present with bilateral inflammation of the eyelids, cornea, and conjunctiva.[5] There are many inflammatory conditions that will present with an acute red eye, including infections, eye inflammation (uveitis, scleritis, episcleritis, pingueculitis), chronic blepharitis, and MGD with ocular rosacea and allergy. A complete history and timeline of symptoms will aid in narrowing the differential.

Ask the patient about associated symptoms such as rhinitis, symptoms of upper respiratory illness (eg, fever, sore throat, etc.), joint pain, and even dermatologic conditions. The location of the redness is critical as well. Note also whether symptoms present monocularly or binocularly.

Watering

Tearing is a common sign of many conditions. Ocular injury and foreign material can trigger a watering response. DED and MGD can also present with excessive tearing. A complete history will help to narrow the differential diagnosis.



ALLERGY FAST FACTS

36% The estimated percentage of the US population with ocular allergies.[1]

6th Allergies are the 6th leading cause of chronic illness.[2]

50 m The estimated number of Americans affected by chronic allergies each year.[2]

Ocular allergies consist of four subtypes[3]:

1. Seasonal allergic conjunctivitis
2. Perennial allergic conjunctivitis
3. Vernal keratoconjunctivitis
4. Contact blepharitis

1. Singh K, Axelrod S, Bielory L. The epidemiology of ocular and nasal allergy in the United States, 1988-1994. *J Allergy Clin Immunol.* 2010;126(4)778-783.
2. Allergy facts. American College of Allergy, Asthma, & Immunology. http://acaai.org/news/facts-statistics/allergies. Accessed February 8, 2021.
3. Rodrigues J, Kuruvilla ME, Vanijcharoenkarn K, Patel N, Hom MM, Wallace DV. The spectrum of allergic ocular diseases. *Ann Allergy Asthma Immunol.* 2020;S1081-1206.

CLINICAL SIGNS

The common clinical signs of ocular allergies, including papillae, conjunctival hyperemia, chemosis, and mucoid discharge, are present in other ocular conditions as well, making diagnosis at times a challenge. With formal allergy testing through a referral to an allergist or with in-office testing from Bausch + Lomb (Doctor's Rx Allergy Focus) or AllerFocus (AllerFocus), narrowing the differential can be easier. Other ocular conditions that can be confused with ocular allergies include the following.

Dry Eye Disease

DED affects as many as 30 million Americans,[6] but only half of those have been diagnosed, and of those diagnosed only a fraction are using prescription therapies.

Inflammation is a cause of both aqueous deficient and evaporative forms of DED; however, many

AT A GLANCE

- Symptoms commonly associated with ocular allergy are often shared with other conditions, most commonly dry eye disease.
- Taking a patient history, performing appropriate tests, and asking pointed questions about the specific nature of symptoms will yield helpful information in determining a correct diagnosis.

patients seek OTC remedies before reporting symptoms to their eye care practitioners. Grittiness and watering can be common to both conditions.

By using TFOS DEWS II guidelines[7] and identifying symptoms with a validated questionnaire and clinical signs with the TearLab Osmolarity System (TearLab), tear breakup time assessment, and vital dye evaluation of the cornea and conjunctiva, we can determine whether DED is present with or without ocular allergy. DED is a chronic disease with periods of acute worsening of symptoms (dry eye flares). These flares can be misdiagnosed as allergy.

Infectious Conjunctivitis

Mucoid discharge is a common clinical finding of both allergy and infectious conjunctivitis.[8] History is important for determining etiology. Factors helpful in determining a diagnosis include time of onset, whether presentation is monocular or binocular, the amount of drainage, the color of discharge, and whether the discharge is a repeating occurrence with seasonality.

In the case of adenovirus, in which watering is also common, point-of-care testing with the QuickVue Adenoviral Conjunctivitis Test (Quidel) makes diagnosis easier.

Contact Lens–Related

Contact lens wearers can present with many complications, ranging from an acute red eye to keratitis, limbal injection, and even papillary conjunctivitis. Contact lens overwear, tight lens syndrome, and contact lens–induced DED can result in red eyes, photophobia, and watering similar to allergy.[9]

Drug-Induced

Preservatives such as benzalkonium chloride, found in many topical medications and OTC products, can cause a toxic conjunctivitis with prolonged use.[10,11] Discontinuation of the product containing the offending ingredient typically yields improvement in both signs and symptoms.

Blepharitis

In patients with CBC, blepharitis can be in the differential diagnosis. Patients may present with symptoms of itching, often at the base of the eyelashes, along with scaling and even mild lid edema.

Giant Papillary Conjunctivitis

Although conjunctival papillae are present, giant papillary conjunctivitis (GPC) is a hypersensitivity reaction that is not allergic in nature. Seasonal allergic conjunctivitis is a risk factor for GPC, and there is seasonality in both, with peaks in the spring and fall.[12]

Mucus Fishing Syndrome

The adnexa of patients with mucus fishing syndrome often have an appearance similar to that of a patient with chronic allergy. Eyelid swelling and dermatitis are common, in addition to papillary conjunctivitis, which is from chronic insult induced by the patient trying to remove foreign matter from the eye itself, referred to as mucus fishing. The repetitive habit perpetuates the signs and symptoms.[13] Prompt diagnosis and introduction of antiinflammatory medication can greatly improve this condition.

BE DISCERNING

Itchy, red, swollen, watery eyes may scream "allergies," but listen to that inner voice telling you to take the time to rule out other possibilities. This is where vital dye staining and point-of-care testing can be of value. Remember, it's common for allergy to be present *in addition to* other ocular conditions, in which case dual therapy may be needed to achieve the best outcomes for the patient. ■

1. Hom MM, Nguyen AL, Bielory L. Allergic conjunctivitis and dry eye syndrome. *Ann Allergy Asthma Immunol*. 2012;108(3):163–166.
2. Kari O, Saari KM. Diagnostics and new developments in the treatment of ocular allergies. *Curr Allergy Asthma Rep*. 2012;12(3):232–239.
3. Peiser M, Tralau T, Heidler J, et al. Allergic contact dermatitis: epidemiology, molecular mechanisms, in vitro methods and regulatory aspects. Current knowledge assembled at an international workshopt at BfR, Germany. *Cell Mol Life Sci*. 2012;69(5):763–781.
4. Stapleton F, Alves M, Bunya VY, et al. TFOS DEWS II epidemiology report. *Ocul Surf*. 2017;15(3):334–365.
5. Rodrigues J, Kuruvilla ME, Vanijcharoenkarn K, Patel N, Hom MM, Wallace DV. The spectrum of allergic ocular diseases. *Ann Allergy Asthma Immunol*. 2020;S1081-1206(2)31220-5.
6. Paulsen AJ, Cruickshanks KJ, Fischer ME, et al. Dry eye in the Beaver Dam Offspring Study: prevalence, risk factors, and health-related quality of life. *Am J Ophthalmol*. 2014;157(4):799–806.
7. Craig JP, Nichols KK, Akpek EK, et l. TFOS DEWS II definition and classification report. *Ocul Surf*. 2017;15(3):276–283.
8. Morrow GL, Abbott RL. Conjunctivitis. *Am Fam Physician*. 1998;57(4):735–746.
9. Ramamoorthy P, Sinnott L, Nichols JJ. Treatment, material, care, and patient-related factors in contact lens-related dry eye. *Optom Vis Sci*. 2008;85(8):764–772.
10. Baudouin C. Detrimental effect of preservatives in eyedrops: implications for the treatment of glaucoma. *Acta Ophtahlmol*. 2008;86(7):716–726.
11. Jaenen N, Baudouin C, Pouliquen P, Manni G, Figueiredo A, Zeyen T. Ocular symptoms and signs with preserved and preservative-free glaucoma medications. *Eur J Ophthalmol*. 2007;17(3):341–349.
12. Begley CG, et al. Association of giant papillary conjunctivitis with seasonal allergies. *Optom Vis Sci*. 1990; 67(3):192–195.
13. Slagle WS, Slagle AM, Brough GH. Mucus fishing syndrome: case report and new treatment option. *Optometry*. 2001;72(10):634–640.

LESLIE O'DELL, OD, FAAO
- Clinical Director, Medical Optometry America, York, Pennsylvania
- Chief Medical Editor, *Modern Optometry*
- helpmydryeyes@gmail.com; Instagram @fullscope_od; Twitter @dryeyediva
- Financial disclosure: Consultant (Sun Pharmaceuticals, Novartis, Allergan, Tarsus Pharmaceuticals, Kala Pharmaceuticals, Bausch + Lomb)