



Ophthalmology Update

Richmond Eye Associates, P.C.

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Special points of interest:

- Treatment of corneal abrasions can be tailored to the patient, and patching may be optional.
- There are many treatment options available for allergic and bacterial conjunctivitis.
- The symptom of flashing lights has several etiologies, from retinal to neuro-ophthalmic.

Ophthalmic topics of interest to the medical physician

Primary Care Management of Common Eye Disorders

This issue discusses eye conditions commonly encountered by primary care physicians, often on an emergency or urgent care basis. Diagnostic pearls, treatment options, and special cases requiring referral to an ophthalmologist are discussed.

Corneal Abrasions: Patch or No Patch?

Corneal abrasions are among the most pain eliciting and incapacitating of eye injuries. It has been estimated that up to 10% of new admissions to eye emergency units are from corneal abrasions. Common causes of corneal abrasions include foreign body removal, and paper, fingernail, hairbrush or branch scratches. Symptoms include pain, foreign body sensation, photophobia, tearing, and blurred vision. Usually, corneal abrasions heal within 2 to 3 days without long-term complications.

Conventional treatments for corneal abrasions have included a patch and a no-patch treatment. In the case of patching, an antibiotic ointment such as erythromycin is placed with or without a short term cycloplegic eyedrop (mydracyl or

cyclogel 1%). The patch consists of one eye pad folded in half and placed on the closed eye. A second eye pad is then taped in place over the first. Generally, the patch should not be removed by the patient for about 24 hours. If the patch comes loose, or if the eye can open under the patch, it should be removed by the patient. A no-patch treatment should subsequently be available for the patient to use.

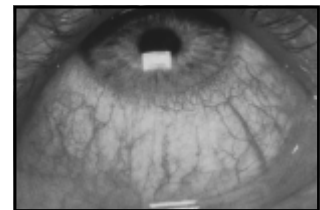
In the no-patch treatment, an antibiotic ointment such as erythromycin, bacitracin, or polysporin is placed intermittently by the patient in the affected eye, with or without a short term cycloplegic agent. Artificial tears can also be used.

A study published in *Ophthalmology* (1995; 102:1936 – 1942, Kaiser, PK)

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Allergic Conjunctivitis: Treatment Options

Seasonal ocular allergy affects an estimated 56 million Americans, or nearly 20% of the population. The incidence of seasonal ocular allergy seems to be increasing, along with that of other seasonal allergies. Fortunately, there are many treatment options available to offer relief to these patients.



Typical allergic conjunctivitis

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Seasonal Ocular Allergy Treatment Options (continued from page 1)

Itching is the primary symptom of allergic conjunctivitis, along with a watery discharge and non-specific ocular injection. Some patients develop chemosis of the conjunctiva, which is clear fluid under the conjunctiva in response to histamine release. The conjunctiva may appear moist or even jelly-like. Eyelids and periocular tissue may be edematous, and may also itch. Of course, there may be associated allergic rhinitis as well.

Ocular medications helpful in allergic conjunctivitis include topical antihistamines, mast cell inhibitors, non-steroidal anti-inflammatory agents, selective steroidal agents, vasoconstrictors, and artificial tears. Non-medication approaches toward treatment are important. This includes the identification, elimination and avoidance of the offending allergens. Cold compresses can decrease edema, and act as a vasoconstrictor.

Over-the-counter allergy preparations are of limited use. While some true antihistamines are available OTC (such as pheniramine), most OTC products are simple vasoconstrictors (“get the red out drops”), with little or no actual therapeutic benefit. However, artificial tears, especially preservative free ones, are useful. These can dilute the allergen load present in the tear film, and can help with the dryness that accompanies oral antihistamine use.

Livostin and Emadine are potent ocular antihistamines capable of reducing itching and redness rapidly and prophylactically. Usually these can be used every 4 – 6 hours.

Patanol is both an antihistamine as well as a mast cell inhibitor, thus offering both an immediate therapeutic effect as well as a prophylactic effect. It is longer acting, and is given 2 – 3 times a day. The anti-itching effect of Patanol may be the most powerful available.

Crolom, Alomide, and Cromolyn sodium are effective mast cell inhibitors. While they need to be used in advance of seasonal symptoms, they can be effective prophylactically.

Acular is a non-steroidal anti-inflammatory agent that can be used up to four times a day for allergic conjunctivitis. Many patients are bothered by the significant stinging that accompanies the use of this eyedrop

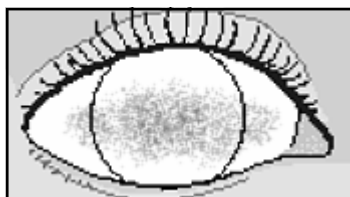
Alrex and Lotemax are recently developed selective steroidal approved for allergic conjunctivitis, as well as other more serious ophthalmic inflammatory disorders. They do not penetrate well into the eye, and thus have a minimal risk for steroid related complications such as glaucoma or cataract. Alrex is essentially 1/2 strength Lotemax, but in a more lubricating preparation. These may be especially useful for more severe cases with internal eyelid inflammation.

Clinical Pearl: Corneal Fluorescein Staining Patterns

This section illustrates some different patterns of corneal fluorescein staining, and their significance. Treatment options are widely different based on these different patterns. Of course, there may be overlap and variations in different conditions.



Corneal involvement of blepharitis of the lower lid margin.



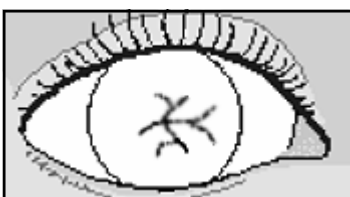
Severe dry eye with staining in palpebral fissure and on conj.



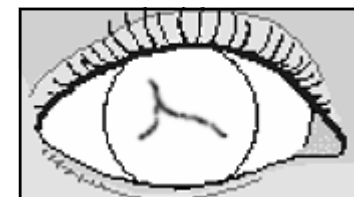
Typical traumatic corneal abrasion with dense uptake of stain.



Foreign body under upper lid and numerous linear abrasions.



Dendritic lesion of herpes simplex keratitis.



Epithelial healing seam of above abrasion – pseudodendrite.

Treatment of Conjunctival and Eyelid Infections

Conjunctivitis is a common ocular infection which fortunately rarely has any long term sequelae. In adults, the most common form of the disease, by far, is viral. This may be associated with a co-existing upper respiratory infection or throat infection. A more severe adenoviral infection can lead to Epidemic Keratoconjunctivitis (EKC). Typical viral conjunctivitis is characterized by severe itching, watery or mucoid discharge, and periocular edema. One eye, and then the other is usually affected, and a history of coexisting infection or contact with an affected individual can often be elicited. Treatment is supportive, using antihistamine or anti-inflammatory eyedrops such as Livostin or Acular, cold compressed, and hygiene to prevent spread. The infection usually resolves in 1 to 2 weeks.

The more severe EKC has corneal involvement, leading to more symptoms of photosensitivity and foreign body involvement. Small infiltrates develop beneath the corneal epithelium. These do not usually stain with fluorescein, but may be visible with oblique illumination of the cornea with a penlight. Ophthalmic consultation may be required, because the symptoms may necessitate the use of ophthalmic steroids to fully control. Usually an ophthalmic antibiotic such as Polytrim or Neosporin can be used for bacterial coverage (although up to 10% of patients develop a hypersensitivity reaction to neomycin).

Acute bacterial conjunctivitis in adults is characterized by

a more purulent discharge. Streptococcus and Staphylococcus species are common causes. The time course of the infection is usually 5 – 7 days. Polytrim and Neosporin are good antibiotic eyedrop choices. Sulfa and aminoglycosides (gentamicin and tobramycin) can be used, but tend to be irritating and toxic to the cornea. Fluoroquinolones (Cipro and Ocuflax) are well tolerated and effective, especially if gram negative organisms are suspected.

An entity known as “hyperpurulent bacterial conjunctivitis” exists and is characterized by severe purulent discharge, severe conjunctival edema, marked lid edema, and a rapid onset. Possible causes include *Neisseria gonorrhoeae* and *Neisseria meningitidis* in adults and children, and *Chlamydia trachomatis* in neonates. Culturing and gram stain is required in cases of hyperpurulent conjunctivitis, with mandatory systemic treatment of *Neisseria*. *Neisseria* infections can invade intact cornea and lead to perforation.

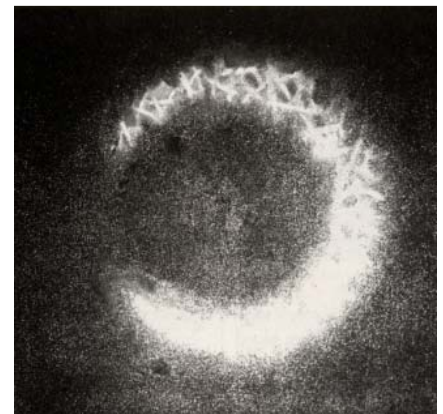
Eyelid infections, or blepharitis, are common causes of burning and itching of the eyes, and often complicate dry eye problems. Chronic bacterial colonization of the lid margin can even lead to corneal breakdown. Inflammation of the meibomian glands is common, and especially severe in Rosacea acne. Treatment consists of persistent eyelid cleaning routines, often using warm compresses. A mild antibiotic ointment at bedtime, such as erythromycin or bacitracin, can control the condition, but may have to be used repeatedly.

The Flashing Lights Symptom: a differential diagnosis

The symptom of flashing lights (photopsia) can indicate a variety of conditions, but a detailed nature of the flashing must be elicited from the patient.

- **Vitreo-retinal traction, posterior vitreous detachment, or impending retinal detachment:** This is typically described by a patient as a transient, sudden, bright flash in the peripheral vision of one eye, often with eye or head movement. Sometimes these flashes are only seen at night. Examination by an ophthalmologist is necessary to identify the cause, since a retinal tear can be treated to prevent a detachment. The traction of the vitreous body on the retina is perceived as a flash, much as being poked in the eye is seen as a flash. If it is associated with floaters, visual loss, or high nearsightedness more urgent referral is warranted.
- **Migraine Aura (with or without a headache):** This is a frightening visual phenomenon to many people, and is characterized by an expanding negative scotoma surrounded by brilliant, scintillating, zig-zag or sawtooth figures. The episode usually lasts 15 – 20 minutes, and

should be perceived as originating from both eyes, although many patients only notice aura in the eye corresponding to the temporal side. A headache may, or may not, follow.



An Artist's Depiction of a Migraine Visual Aura

- **Vertebral basilar insufficiency:** In some cases, patients with this condition will perceive flashes of lights. They might also experience episodes of bilateral dim-

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- Extensive patient information, including discussion of over 80 eye conditions
- Physician section with cases and topics of interest
- Office locations, directions, insurances

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 270-0330

Stony Point Office

8700 Stony Point Pkwy.
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 330-3333

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 236-9900

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Ophthalmology Update

Editor:
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Patch or No Patch? (con't)

addressed this patching question. 201 patients presenting with non-treated, non-contact lens related corneal abrasions were randomized to be either given a patching or no-patching treatment as outlined above. In the cases of small abrasions, the **no-patch** group healed faster and with less pain than the patched group. Many of these were abrasions after foreign body removal.

Larger abrasions (greater than 10mm²) healed faster and with less pain **with a patch**, although in this study the number of patients with large abrasions was too small to reach statistical significance.

Some important points about the healing and treatment of corneal abrasions include:

- A loose or poorly placed patch is worse than none at all.
- Corneal abrasions in contact lens users should not be patched. In fact, most of these should be seen by an ophthalmologist to rule out infectious keratitis.
- Ragged corneal abrasions will not heal until loose epithelial edges are debrided. These definitely perform poorly under a patch, and the epithelium may continue to slough off.

- Beware of seemingly spontaneous corneal abrasions, especially upon awakening. These may represent recurrent corneal erosions, often caused by a basement membrane dystrophy of the cornea. Specialized treatment is required for these erosions, sometimes including bandage contact lenses.
- A patient with significant eye trauma can be at risk for glaucoma, cataract, retinal detachment or hemorrhage, and iritis. Appropriate referral to an ophthalmologist can rule out these complications.
- Always be suspicious for infection of corneal abrasions, and for herpetic keratitis, as well as other syndromes that masquerade as corneal abrasions (see page 2).

Flashing Lights (con't from page 3)

ming of the vision and imbalance.

- **Melanoma associated retinopathy:** A rare but newly described cause of flashing lights, often as a persistent "kaleidoscope". This is often bilateral, but may be unilateral. A history of melanoma, possibly remote, can be elicited. Metastatic work-up may initially be negative.