

Conjunctivitis Update for Urgent Care

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Urgent care physicians are among the first clinicians to encounter patients with conjunctivitis. Representing 1% to 2% of all patient visits, conjunctivitis is the most common ocular disorder that presents to urgent care. The management of conjunctivitis varies greatly among urgent care clinicians because of diagnostic difficulties and lack of experience with ophthalmic medications. This results in ocular complications caused by improper treatment, and many ophthalmologists will privately admit to having managed such complications in a patient either self-referred or referred from urgent care.

Fortunately, the past three years have become an exciting period in ophthalmology because of new diagnostic modalities and novel medications with increased efficacy and safety. Providing state-of-the-art ophthalmic care requires urgent care physicians to address the following questions:

- What type of conjunctivitis is present?
- Is the patient contagious?
- Can the patient be safely treated, or should I refer to an ophthalmologist?
- Which ophthalmic medication(s) can be used to safely and effectively treat conjunctivitis?

INITIAL WORKUP

All urgent care physicians must conduct skillful eye examinations when managing conjunctivitis. A slit lamp

is very helpful in ruling out serious red eye emergencies. If a slit lamp is unavailable, a magnifying glass, fluorescein dye, and cobalt blue light (penlight or Wood's lamp) can be used to rule out corneal abrasions and ulcers. The presence of a hyphema or hypopyon in the anterior chamber should be reported to an ophthalmologist immediately. Topical anesthetics are used as a diagnostic tool to facilitate the examination of patients with eye irritation but should never be dispensed for pain management because of potential corneal toxicity. They should be safely locked away to prevent theft and abuse by patients with chronic eye pain.

ALLERGIC CONJUNCTIVITIS

Allergic conjunctivitis is believed to be on the rise in industrialized countries, and there is no specific diagnostic test. Physicians must therefore recognize its signs and symptoms (table 1). Tearing, redness, and frequent eye-rubbing, especially during peaks of seasonal allergies, suggest this diagnosis. However, the hallmark symptom is ocular itching, which has been reported to occur in the majority of cases. The injected and swollen conjunctiva may appear glasslike because of light reflecting from the excess tear fluid. Chronic eye-rubbing may give the eyelids a raccoon-like appearance (figure 1).

Conservative treatment includes preservative-free artificial tears, cold compresses, and avoidance of offending allergens. Although topical vasoconstrictors (naphazoline) have demonstrated efficacy, the duration of therapy

TABLE 1. Allergic conjunctivitis—possible symptoms and signs

- ocular itching
- frequent eye-rubbing
- bilateral involvement
- raccoon-like appearance of eyelids with chronic duration

should be limited to a few days, as chronic use can cause a secondary conjunctivitis. Topical antihistamines have been shown to have efficacy over vasoconstrictors in reducing symptoms, while lacking the sedating side effects of their oral counterparts. Newer-generation topical antihistamine and mast cell stabilizer combinations (epinastine, olopatadine) have a dual mechanism of action that offers superior clinical efficacy and a longer duration of action.

Topical steroids are used for severe and chronic cases of allergic conjunctivitis. Only ophthalmologists should dispense them because they can cause cataracts and glaucoma and exacerbate microbial infections (corneal ulcers) without close monitoring. In one survey, the majority of ophthalmologists admitted to having seen at least one case annually of ocular herpes simplex exacerbated by topical corticosteroid use in primary care. Physicians should therefore never prescribe topical steroids in the urgent care setting.

VIRAL CONJUNCTIVITIS

Viral conjunctivitis is typically caused by adenovirus, and urgent care physicians are often the first to encounter it in patients. The peak incidence occurs during the fall season. Numerous epidemics have been reported in schools, communities, and hospitals because of failure to recognize and contain this contagious disease. Urgent care personnel should practice universal precautions in any patient with acute conjunctivitis to prevent outbreaks within the clinic or hospital. Physicians must recognize the key history findings and signs and symptoms in order to identify contagious patients (table 2).

Unfortunately, bacterial conjunctivitis can present similarly to viral conjunctivitis, and a systematic review of the literature reveals that there are no clinical signs or symptoms that can help physicians differentiate the two entities (figure 2). This diagnostic challenge causes many physicians to empirically treat all cases of conjunctivitis with topical antibiotics, regardless of the etiology. This leads to increased resistance and unnecessary antibiotic complications.

How can urgent care physicians identify adenovirus conjunctivitis? Laboratory diagnosis by culture is costly and impractical. In addition, outpatient screening tests



(photo courtesy of Tommy Korn, MD)

FIGURE 1. Allergic conjunctivitis

have previously lacked sufficient sensitivity and specificity. However, a new immunochromatographic test (RPS AdenoDetector) recently approved by the FDA may change the way physicians manage conjunctivitis (figure 3). A multicenter prospective study showed that this test had high sensitivity and specificity for rapidly detecting adenovirus in tear fluid from patients with viral conjunctivitis. A positive or negative result can be obtained in minutes to help identify contagious patients and prevent unnecessary use of topical antibiotics.

Upon diagnosis, patients must be isolated and the examination room disinfected. The duration of the infectious period of adenovirus is unknown; in severe cases it can last for weeks. There are no established guidelines on isolation time, but our practice typically recommends that patients remain at home for at least one week from the onset of symptoms or until the eyes are no longer red. Advise against direct contact with others and recommend good hygiene practices.

There is currently no effective treatment for adenovirus conjunctivitis; supportive care consists of artificial tears and topical antihistamines. Topical corticosteroids prolong adenovirus shedding and should be avoided. An ophthalmology consultation is required if there is no clinical improvement after one week.

BACTERIAL CONJUNCTIVITIS

Bacterial conjunctivitis commonly occurs during the winter season. A cohort study showed that presenting signs include early-morning “glued” eye, absence of itching, and no history of conjunctivitis (figure 4 and table 3). Both gram-positive and gram-negative organisms cause bacterial conjunctivitis, with *Haemophilus influenzae* and *Streptococcus pneumoniae* comprising the majority of pediatric conjunctivitis cases. Staphylococcal organisms are the chief cause in adults. Large epidemics of conjunctivitis caused by a nonencapsulated serotype of *S. pneumoniae* have occurred at a college campus, a military facility, and an urban community. Because of the ease of prescribing broad-spectrum topical antibiotics, cultures are usually not performed except in cases of recurrent conjunctivitis or suspected gonorrheal infection. A Gram stain must be obtained in cases of purulent discharge occurring within 24 hours (hyperacute conjunctivitis) to rule out gonorrhea. This bacterial conjunctivitis is a medical emergency because the risk of

corneal perforation is high if the patient is not hospitalized and treated with systemic and topical antibiotics.

Broad-spectrum topical antibiotics should be considered for the treatment of bacterial conjunctivitis because of the diverse pathogens affecting adults and children. A recent large meta-analysis of five well-controlled trials of topical antibiotics versus placebo showed that bacterial conjunctivitis is a self-limited disease in both children and adults. No adverse systemic or ocular events (e.g., corneal ulcers) were reported if topical antibiotics were withheld; however, if they were used early in the course of disease (days 2 through 5), higher clinical and microbial remission rates could be achieved. The American Academy of Ophthalmology currently recommends using a topical broad-spectrum antibiotic for five to seven days; this leads to faster clinical recovery and reduces the risk of contagious spread.

Urgent care physicians have many choices when prescribing topical antibiotics. Antibiotics such as aminoglycosides and sulfacetamides should be avoided because of their limited spectrum, corneal toxicity, idiosyncratic hypersensitivity reactions, and increased resistance. Topical aminoglycosides, in particular, are notorious for causing a persistent red eye because of toxicity to the ocular surface. Physicians should never prescribe aminoglycoside-steroid combinations (tobramycin-dexamethasone, neomycin-dexamethasone, tobramycin-loteprednol) because doing so mixes the dangers of topical steroids with the toxic potential of aminoglycosides.

Topical fourth-generation fluoroquinolones (0.3% moxifloxacin, 0.5% gatifloxacin) offer broad-spectrum coverage and were developed in light of increasing resistance to third-generation fluoroquinolones. These antibiotics have become widely used by ophthalmologists for infection prophylaxis in cataract surgery patients because of their ability to achieve high concentrations in aqueous fluid. There is evidence, however, that patients exposed to previous fluoroquinolone therapy will develop bacterial flora resistant to future fluoroquinolone exposure. There is also evidence that some ocular bacterial pathogens have already developed resistance to fourth-generation fluoroquinolones. Some experts have thus suggested that these fluoroquinolones be reserved for the treatment of severe eye infections (corneal ulcers) instead of bacterial conjunctivitis because of the potential for developing resistance.

Trimethoprim-polymyxin B is a nontoxic topical antibiotic with broad-spectrum activity that has been used safely in children. This antibiotic, however, requires dosing every three hours for seven days to achieve therapeutic levels, and this frequency could reduce compliance and lead to resistance.

Oral azithromycin is a broad-spectrum antibiotic that has been used to treat trachoma and adult inclusion chlamydia conjunctivitis throughout the world. Topical

TABLE 2. Viral conjunctivitis (adenovirus)—history and physical exam findings

- contact with another person with conjunctivitis
- recent upper respiratory tract infection
- enlarged preauricular lymph nodes
- tearing, redness, and conjunctival edema (unilateral or bilateral)
- follicular reaction seen in palpebral conjunctiva
- scattered white opacities seen in cornea



FIGURE 2. Bilateral bacterial or viral conjunctivitis (clinically indistinguishable)



FIGURE 3. Rapid immunochromatographic detection of adenovirus in tear fluid

azithromycin 0.1% was recently approved by the FDA for the treatment of bacterial conjunctivitis and showed safety and efficacy similar to those of previously approved antibiotics. This azalide antibiotic has been combined with a unique bioadhesive polymer that prolongs the bioavailability in tear fluid, making it useful for topical ophthalmic use. The increase in bioavailability permits less frequent dosing, possibly resulting in better compliance and lowering the chance of developing resistance because of skipped doses. The dosing schedule of this antibiotic is one drop twice a day for two days, then one drop daily for the next five days. This regimen may be practical for busy adults and children with working parents.

Because bacterial conjunctivitis is self-limited, topical antibiotics should be used only to prevent outbreaks and accelerate clinical recovery. Earlier recovery allows patients

(photos courtesy of Tommy Korn, MD)

(photo courtesy of Eric Linebarger, MD)



FIGURE 4. Bacterial conjunctivitis with glued-shut eye and discharge

TABLE 3. Bacterial conjunctivitis—possible symptoms and signs

- any of the symptoms and signs of viral conjunctivitis
- glued-shut eye in morning
- purulent discharge
- absence of itching
- absence of prior conjunctivitis

to return to work or school much sooner. Antibiotic costs vary; medications having broader-spectrum and less frequent dosing are often more expensive. Regardless of the topical antibiotic dispensed, physicians must ensure that patients follow the dosing schedule to completion to prevent incomplete therapy and generating resistance.

MOST COMMON EYE DISEASE

Conjunctivitis is the most common eye disease treated by urgent care physicians. Physicians must differentiate between allergic, bacterial, and viral conjunctivitis so that patients can receive optimal treatment. Ocular itching is the hallmark symptom unique to allergic conjunctivitis. Topical antihistamine/mast cell stabilizers can be used as first-line therapy. Topical vasoconstrictors should be avoided because they can cause toxicity with prolonged use. Topical steroids must be avoided because of possible ocular complications.

Viral and bacterial conjunctivitis are potentially contagious diseases that can have similar clinical presentations. A rapid test for adenovirus in tear fluid can help identify viral conjunctivitis. A negative test result for adenovirus, combined with the presence of a glued-shut eye and absence of itching, indicates bacterial conjunctivitis. To prevent large outbreaks of certain strains, topical broad-spectrum antibiotics should be used in adults and children when bacterial conjunctivitis is confirmed; however, topical an-

tibiotics are effective only if they are used early in the disease course because bacterial conjunctivitis is self-limited. Avoid prescribing antibiotics with potential toxicity and combination aminoglycoside-steroid topical medications. Antibiotics that offer less frequent dosing result in faster eradication, improved compliance, and reduced resistance. Patients who do not improve, regardless of whether topical antibiotic therapy was started, should be referred to an ophthalmologist for further evaluation. ©

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