

Weep, oh mine eyes: an outbreak of bacterial conjunctivitis

Background and epidemiology: A recently reported outbreak of conjunctivitis among college students in New Hampshire was attributed to an unusual, nontypeable strain of *Streptococcus pneumoniae*.¹ The US Centers for Disease Control and Prevention has advised physicians who see college students with conjunctivitis to suspect a bacterial cause and to consider taking a culture of eye secretions and treating with a topical antibiotic. Physicians should also ensure that standard infection control practices are followed.

“Red eye” is the clinical term applied to a variety of distinct infectious or inflammatory processes that involve one or more tissue layers of the eye.² Conjunctivitis is the most common type of red eye. It is most often caused by a viral or bacterial infection, although allergic conjunctivitis, characterized by mild to severe itching, is also common, as is “dry eye” secondary to collagen vascular disease or the use of diuretics, antidepressants or contact lenses.^{2,3}

Adenovirus is by far the most common cause of viral conjunctivitis and should be suspected in patients with an antecedent upper respiratory tract infection. *S. pneumoniae* and *Haemophilus influenzae* are the commonest causes of acute bacterial conjunctivitis in children, whereas the *Staphylococcus* species most frequently affects adults. *Chlamydia trachomatis* and *Neisseria gonorrhoeae* should be included in the differential diagnosis for neonates and for sexually active patients, particularly if the patient complains of chronic, unilateral conjunctivitis accompanied by a “foreign-body sensation” and preauricular adenopathy.² Herpetic infections should also be considered, particularly if the patient has HIV infection.

Although acute infectious conjunctivitis is usually self-limiting, it is highly contagious and can take up to 3 weeks to clear.^{2,3} In New Hampshire 439 (9.7%) of 5060 enrolled students had probable pneumococcal conjunctivitis, and the

rate was as high as 18.0% among first-year students. The most common symptom was eye crusting on awakening. Of 189 samples of eye secretions collected, 43% grew bacteria identified as *S. pneumoniae*. Strains were resistant to erythromycin but susceptible to bacitracin, sulfonamides and quinolones.¹

Clinical management: Acute bacterial conjunctivitis typically presents with burning, irritation, tearing and a mucopurulent or purulent discharge. The infection usually starts in one eye and spreads to the second in a few days. Pain, blurred vision or photophobia indicates the need for an ophthalmic referral to rule out iritis, uveitis, acute glaucoma, keratitis and other conditions. Itching is the calling card of allergic conjunctivitis.²

The type of ocular discharge can be helpful in determining the cause. A serous discharge suggests viral or allergic conditions. A stringy or ropy (mucoid) discharge is characteristic of allergy or dry eyes. A mucopurulent discharge, often associated with morning crusting of the eyes, suggests a bacterial infection. Cultures are usually not indicated but should be obtained if there is severe inflammation or copious discharge or the infection does not respond to treatment. Cold compresses can provide symptomatic relief.²

Most cases of acute bacterial conjunctivitis remit spontaneously, but a recent systematic review concluded that topical or systemic antibiotic treatment further increases clinical and microbiological remission rates.⁴ The review did not look at the cost-effectiveness of antibiotic treatment nor factor in the consequences of antibiotic resistance.

Treatment of viral conjunctivitis is supportive, involving the use of cold compresses and topical vasoconstrictors. Topical corticosteroids should not be used, unless under the direction of an ophthalmologist, because of the risk of virus proliferation following a missed diagnosis of herpes simplex virus kera-



Mucopurulent bacterial conjunctivitis: outbreaks should be reported.

toconjunctivitis, which can mimic ocular adenovirus infection.

Treatment of seasonal allergic rhinoconjunctivitis includes allergen avoidance, the use of cold compresses, vasoconstrictors, antihistamine drops and topical NSAIDs and prophylactic use of mast-cell stabilizers such as cromolyn sodium.³

Prevention: Strategies to reduce the transmission of infectious conjunctivitis include frequent hand washing and the avoidance of sharing drinking glasses, towels and utensils.¹ People with symptoms such as red eyes, morning crusting of the eyes or increased discharge are advised to seek medical care.¹ Physicians should consider a bacterial infection and obtain a culture, treat with antibiotics if necessary and advise the patient about infection-control procedures.¹ Suspected outbreaks should be reported to the local medical officer of health.

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References

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