

Viral Conjunctivitis — Symptoms and Treatment

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Viral conjunctivitis is a common cause of a painful, watery, pink eye. This self-limiting condition is usually caused by adenovirus. Herpes simplex virus, varicella-zoster virus, picornavirus, poxviruses, and the human immunodeficiency virus can also cause viral conjunctivitis. In this article, you will gain a great overview of the symptoms and treatment of viral conjunctivitis for the best medical exam preparation.



Definition of Viral Conjunctivitis

Viral conjunctivitis is a benign and self-limiting inflammation of the conjunctiva by viruses such as adenovirus. It usually lasts longer than bacterial conjunctivitis.

Overview of Viral Conjunctivitis

Viral conjunctivitis is highly contagious. The patient can transmit the disease up to two weeks after the onset of the symptoms. Therefore, the patient while having viral conjunctivitis should be instructed to avoid:

- Touching his or her eye
- Shaking hands
- Sharing utensils with others

The condition usually resolves within two to four weeks.

Epidemiology of Viral Conjunctivitis

Accurate statistics about the incidence and prevalence of viral conjunctivitis are not available in the United States. This is true simply because the **condition is so common and because most cases do not even seek medical attention**. Epidemics of viral conjunctivitis have been reported before where an outbreak seems to occur in a school, shipyard, or an athletic team.

Viral conjunctivitis occurs equally in both genders and can be seen in all age groups.

The viral etiology, however, differs depending on the patient's age. For instance:

- Adenoviruses the most common cause of viral conjunctivitis in patients aged 20 to 40 years.
- [Herpes simplex virus](#) is a common cause of viral conjunctivitis in children and infants.
- [Herpes zoster ophthalmicus](#) may present in any age group, however, it is more common in the elderly.
- Picornaviruses tend to **affect children and adults who come from a lower socioeconomic status**. Fortunately, most cases of viral conjunctivitis resolve spontaneously and are benign. Long-term ocular complications are rarely seen in patients with viral conjunctivitis.

Etiology of Viral Conjunctivitis

The most common **cause of viral conjunctivitis is adenovirus**. The epidemic keratoconjunctivitis and pharyngoconjunctival fever are two common examples of [adenoviral conjunctivitis](#).

Patients with viral conjunctivitis typically have a prodromal period of three to seven days. The condition is highly contagious during the prodromal period and the active disease period. The main mode of transmission is through accidental inoculation of viral particles from the patient's hands, fomites, or contaminated swimming pools.

Herpes simplex virus type I, and less frequently type II, are implicated in viral conjunctivitis in young children and infants. Recurrent herpes simplex viral conjunctivitis might be seen in adults. Picornaviruses cause acute hemorrhagic conjunctivitis. The condition is similar to adenoviral conjunctivitis with the exception of being more severe and hemorrhagic. Picornaviral conjunctivitis typically occurs in epidemics. Chronic follicular conjunctivitis has been reported to occur in patients infected with molluscum contagiosum.

The human immunodeficiency virus **usually affects the posterior segment of the eye**, however, anterior segment involvement has been reported before. Patients with conjunctivitis due to human immunodeficiency virus typically have more severe and prolonged disease if they also have developed acquired immunodeficiency syndrome AIDS.

Other causes of viral conjunctivitis include:

- Varicella-zoster virus.

- Poxvirus.

Clinical Presentation of Viral Conjunctivitis

Patients usually complain of:

- Red painful
- Watery eye with sudden onset
- A runny nose
- Pharyngitis might

History of exposure to an individual with a red eye at home is usually present. The eye infection can be unilateral or bilateral. Patients also complain of ocular itching, foreign body sensation, tearing, redness, discharge, and photophobia. If photophobia is present, the likelihood of [corneal involvement](#) increases. In that case, the diagnosis of keratoconjunctivitis is suspected.

Illness	Symptoms
Adenoviral pharyngoconjunctival fever	<ul style="list-style-type: none"> • Conjunctivitis, pharyngitis, and fever • Other causes and types of conjunctivitis typically do not present with systemic manifestations
Ocular herpes simplex virus infection	<ul style="list-style-type: none"> • Occurs in young children and infants • Similar to adenoviral conjunctivitis with one more feature: multiple vesicular lesions on the eyelid skin
Varicella-zoster virus conjunctivitis	<ul style="list-style-type: none"> • Generalized vesicular eruption • Fever • Fatigue in addition to conjunctivitis
Acute hemorrhagic conjunctivitis	<ul style="list-style-type: none"> • Rapid onset of watery discharge • Photophobia • Severe redness of the involved eye and burning sensation • Patients usually come from a lower socioeconomic status

The physical examination might reveal preauricular adenopathy, epiphora, hyperemia, chemosis, and subconjunctival hemorrhage. The cornea might demonstrate punctate epitheliopathy. Subepithelial corneal infiltrates are seen one to two weeks after the onset of symptoms.

If complications occur, they might include :

- Punctate keratitis
- Bacterial superinfection
- Conjunctival scarring
- Symblepharon
- Dry eye.
- Corneal scars
- Corneal ulcers.
- Chronic infection.

These complications are more commonly seen in patients with herpes simplex virus conjunctivitis. Severe eye dryness, corneal ulceration, persistent keratoconjunctivitis, and chronic infection have been also reported in few cases of herpes simplex virus conjunctivitis.

Diagnostic Workup for Viral Conjunctivitis

The diagnosis of viral conjunctivitis is usually a clinical one. **Patients with viral conjunctivitis have:**

- Inferior palpebral conjunctival follicles
- Tender palpable preauricular lymph node
- Watery eye discharge
- Red and edematous eyelids
- Subconjunctival hemorrhages
- Punctate keratopathy
- Pseudomembrane

Patients with herpes simplex viral conjunctivitis might develop [corneal dendrites](#). If the patient develops extensive multiple dendrites, immunocompromise should be suspected. The most common causes of immunocompromise include exposure to long-term topical steroid therapy, systemic immunosuppressive medications, or human immunodeficiency virus infection.

Culture, smear, and stain might be useful in select cases. If the inflammation is severe, chronic, or recurrent, the treating physician should consider ordering a smear and culture test. This is especially true if the patient fails to respond to classical treatments.

Giemsa staining of conjunctival scrapings is helpful in differentiating viral from bacterial conjunctivitis. In bacterial conjunctivitis, you would see a predominance of polymorphonuclear cells on your Giemsa stain test. On the other hand, viral conjunctivitis is associated with mononuclear cells and lymphocytes mediated inflammatory response.

Used for detection of viral antigens and isolation of the etiological virus in conjunctivitis:

- Direct immunofluorescence monoclonal antibody staining
- Enzyme-linked immunosorbent assay
- Electron microscopy
- Polymerase chain reaction assay
- Immunoperoxidase

Viral isolation is rarely indicated in a clinical scenario and is usually performed in the context of a research project.

Treatment of Viral Conjunctivitis

Adenoviral conjunctivitis treatment is supportive. Antiviral agents are usually not indicated in the case of viral conjunctivitis except in the case of herpes simplex virus conjunctivitis. Topical ganciclovir is the only antiviral known to be effective in herpes simplex virus conjunctivitis and keratitis.

Betadine combined with low-dose dexamethasone might be a promising option for viral conjunctivitis treatment. A phase III clinical trial is currently testing this promising combination in adenoviral, herpes simplex virus, varicella-zoster virus, and picornaviral conjunctivitis.

Patients with severe itching might benefit from a **topical antihistamine**. Unfortunately, the efficacy of topical antihistamines is limited.

Used for the prophylaxis against superimposed bacterial conjunctivitis in patients with severe viral conjunctivitis:

- Ofloxacin ophthalmic
- Trimethoprim-polymyxin B ophthalmic
- Ciprofloxacin ophthalmic
- Sulfacetamide ophthalmic

References

MedScape: <https://emedicine.medscape.com/article/1191370>.

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