

Overview of Pink Eye Infection (Conjunctivitis)

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ABSTRACT

Conjunctivitis, commonly referred to as pink eye, pertains to the inflammatory process occurring in the conjunctiva. The conjunctiva is a thin, transparent mucous membrane that covers the inner surface of the eyelids as well as the outer surface of the sclera, providing a protective barrier and lubrication to the ocular surfaces. Conjunctivitis exhibits its effects across all age groups in the population. Conjunctivitis frequently presents with ocular redness and exudate. Conjunctivitis can be attributed to various etiological factors, encompassing infections, allergies, or the presence of foreign bodies within the ocular apparatus. Not all instances of red eyes can be attributed solely to conjunctivitis. This review analyzes conjunctivitis subtypes' presentations, diagnostics, and interventions. This method helps prevent medicalization of the ailment by reducing the need for further consultations and discouraging unnecessary antibiotic use, potentially delaying the identification of other serious red eye conditions.

Introduction:

Conjunctivitis, commonly referred to as pink eye, denotes an inflammatory condition affecting the lucid membranous lining that encompasses the eyelid and eyeball. The aforementioned membrane is commonly referred to as the conjunctiva within academic discourse. When the capillaries present in the conjunctiva experience swelling and irritation, they become perceptible due to increased visibility. This phenomenon, known as the reddish or pink appearance of the whites of the eyes, is attributed to a specific cause. Conjunctivitis is an alternate term for pink eye. Pink eye, scientifically referred to as Conjunctivitis, is predominantly instigated by viral pathogens. One potential cause of this condition is attributed to bacterial infection, while another factor involves allergic reactions in infants, as well as incomplete opening of the tear ducts. The condition known as conjunctivitis, colloquially referred to as "pink eye," typically incites discomfort, yet it infrequently leads to vision impairment. Medical interventions have been demonstrated to alleviate the symptoms associated with conjunctivitis. Due to the contagious nature of conjunctivitis, early detection and adherence to appropriate preventive measures can effectively mitigate its transmission.

Serious Eye conditions

There are severe eye conditions that may lead to the redness of the eyes. These conditions can lead to ocular discomfort, sensation of foreign body presence, reduced clarity of sight, and heightened sensitivity to light. If you encounter these symptoms, it is crucial to promptly seek medical attention. Individuals who use contact lenses must discontinue wearing them promptly as soon as symptoms of pink eye emerge. If your symptoms do not improve within 12 to 24 hours, it is advisable to schedule an appointment with your eye doctor to rule out the possibility of a severe eye infection associated with wearing contact lenses [1].

Table No: 1 Causes, complication, symptom, prevention of (conjunctivitis) pink eye infection

Sr.No	Causes of pink eye Infection	Complications	Symptoms	Prevention
1	Viruses	Eye pain	One or both eyes exhibiting symptoms of redness	Avoid bringing your hands near your eyes
2	Bacteria	Having a sensation of an object being trapped inside your eye	Symptoms of itchiness experienced in either one or both eyes	Make sure to use a fresh towel and washcloth every day
3	Allergies	Blurred vision	Discharge in one or both eyes forming a crust overnight, hindering morning eye opening	Make sure to regularly clean your hands using soap

4	A foreign item present in the eye	Light sensitivity	Tearing	Get rid of expired eye makeup, like mascara
5	A situation where a dangerous chemical comes into contact with the eye		Photophobia, the state of being sensitive to light	Regularly change your pillowcases frequently
6	A condition called a blocked tear duct can occur in newborns		A sensation of roughness in either one or both eyes	Do not exchange towels or washcloths

Type of conjunctivitis

There are five primary classifications of conjunctivitis: viral, bacterial, allergic, toxic, and non-specific. The majority of cases of infectious conjunctivitis in both adults and children are caused by viruses, although bacterial conjunctivitis is more prevalent among children than adults.

Viral and bacterial conjunctivitis

The majority of pink eye cases are due to adenovirus, although it can also stem from other viruses like herpes simplex virus and varicella-zoster virus. Viral and bacterial conjunctivitis could both manifest alongside colds or symptoms of a respiratory infection, like a sore throat. Wearing unclean or mismatched contact lenses can result in bacterial conjunctivitis, an eye infection. Both forms have a high level of contagiousness. They can be transmitted through either direct or indirect exposure to the fluid draining from the eye of an infected person. There is a possibility that either one or both eyes could be impacted.

Allergic conjunctivitis

Allergic conjunctivitis impacts both eyes and occurs as a result of an allergic reaction to substances like pollen. When faced with allergens, your body generates a specific type of antibody known as immunoglobulin E (IgE). IgE prompts specific cells in the mucous lining of your eyes and airways to discharge inflammatory substances, such as histamines. The release of histamine in your body can lead to various allergic reactions, such as the presence of red or pink eyes. If you suffer from allergic conjunctivitis, you might encounter severe itchiness, excessive tearing, and eye inflammation, along with sneezing and a runny nose. The majority of cases of allergic conjunctivitis can be effectively managed by using eye drops specifically designed for allergies. Allergic conjunctivitis cannot be transmitted from one person to another.

Toxic Conjunctivitis

Toxic conjunctivitis, also known as toxic keratoconjunctivitis, refers to the situation where ocular tissues are harmed by a harmful substance, typically a preservative or medication. Prolonged use of the harmful substance can lead to an inflammation of the conjunctiva, resulting in either a papillary or

follicular reaction. This can cause the conjunctiva to swell, become red, and retain excessive fluid. Allergic conjunctivitis and toxic conjunctivitis frequently present similar features, leading to confusion between the two. Ocular surface medicamentosa is the most prevalent type of toxic conjunctivitis. Ocular surface medicamentosa refers to the toxic effects and immune response of the ocular surface and surrounding structures to medications and/or preservatives through chemical exposure or delayed hypersensitivity reactions. The use of topical eye drops that are preserved is becoming more common for the treatment of glaucoma and conditions that affect the surface of the eye, such as dry eye disease. Ocular surface medicamentosa is often linked to prolonged usage of topical eye drops. If not promptly diagnosed and treated, ocular surface medicamentosa can lead to noticeable symptoms and impairment of vision, impacting one's overall well-being, daily routine, and work performance. Hence, it is crucial to accurately diagnose, distinguish from dry eye disease, and appropriately handle the situation.

Nonspecific conjunctivitis

It is conceivable to experience redness in the eyes and a discharge that is unrelated to infection, allergies, or toxicity. The most frequent reasons comprise one of the subsequent options. Individuals experiencing dry eye may have persistent or occasional redness or discharge. If someone's eyes are flushed with water following contact with a chemical, they may experience redness and discharge. If an individual has a foreign object like dust or eyelash in their eye, they may experience redness and discharge for a period of 12 to 24 hours following the removal of the object. Typically, all of these issues tend to resolve themselves naturally within a day [2].

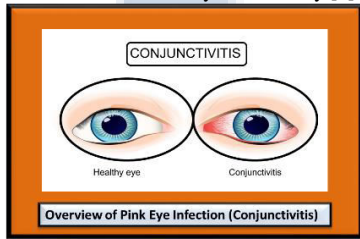


Figure 1: Pink Eye Infection

Conjunctivitis resulting from irritation

Conjunctivitis can be attributed to irritation caused by a chemical splash or the presence of a foreign object in the eye. On occasion, the act of rinsing and cleansing the eye to remove a chemical or foreign object can result in redness and irritation. Typically, symptoms such as watery eyes and a discharge of mucus tend to resolve spontaneously within approximately 24 hours. If the symptoms persist after flushing or if the chemical involved is corrosive like lye, it is crucial to promptly seek medical assistance from a healthcare provider or an eye specialist. Permanent eye damage can be inflicted by a chemical splashing into the eye. Continuing symptoms might suggest that the foreign object is still present in your eye. Alternatively, there is a possibility of having a superficial injury to either the cornea or the conjunctiva, which is the protective layer over the eyeball [3].

Symptoms

The usual symptoms of pink eye are typically characterized by a pinkish discoloration of the eye. The presence of redness in either one or both eyes. Experiencing discomfort or irritation in either one or both eyes. A sensation of grittiness experienced in either a single eye or both eyes. One or both of your eyes may have a crusty discharge during the night, making it difficult to open them in the morning. The condition known as photophobia involves a heightened sensitivity to light.

Risk factors

Risk factors associated with the development of pink eye include. Being in contact with someone who has contracted either viral or bacterial conjunctivitis. Experiencing allergic conjunctivitis occurs when you come into contact with a substance that triggers your allergies. Utilizing contact lenses, particularly those designed for extended use.

Complications

Pink eye, or conjunctivitis, has the potential to induce inflammation in the cornea that can impair vision in both children and adults. Seeking prompt evaluation and treatment from your healthcare provider can effectively lessen the likelihood of experiencing complications, such as eye pain. A sensation of something lodged in your eye. Impaired eyesight sensitivity to light.

Diagnosis

In the majority of situations, your healthcare provider can determine the presence of pink eye by inquiring about your recent medical background and symptoms, as well as conducting an examination of your eyes. Occasionally, your healthcare provider might collect a sample of the fluid draining from your eye in order to conduct a laboratory analysis referred to as a culture. In the event that your symptoms are severe or if your healthcare provider suspects a potentially serious cause, such as a high-risk factor, a culture test might be necessary. The presence of a foreign object in your eye. A severe bacterial infection. A contagious disease transmitted through sexual contact.

Prevention

Preventing the spread of pink eye

To prevent the spread of pink eye, it is important to maintain good hygiene practices. Avoid touching your eyes directly with your hands. Frequently cleanse your hands, utilize freshly laundered towels and washcloths on a daily basis, and refrain from sharing them with others. Make sure to regularly replace your pillowcases. Dispose of outdated eye cosmetics, like mascara. Avoid sharing eye cosmetics or personal eye care items. Remember that pink eye is just as contagious as the common cold. If you maintain good hygiene and stay away from close contact, it is safe to go back to work, school, or child care. Nevertheless, if engaging in activities such as work, school, or child care necessitates close proximity to others, it would be advisable to remain at home until both you and your child's symptoms dissipate.

Preventing pink eye in newborns

The eyes of newborns are vulnerable to the bacteria found in the mother's birth canal. Frequently, these bacteria do not cause any symptoms in the mother. In certain situations, these bacteria have the potential to induce a severe type of conjunctivitis called ophthalmia neonatorum in infants, requiring urgent intervention to protect their eyesight. That is why immediately after being born, a medication cream is used on the eyes of every newborn. The ointment serves to enhance protection against eye infections.

Treatment for allergic conjunctivitis

If you have allergic conjunctivitis, there are various eye drops that your healthcare provider can recommend. There are various medications available to manage allergic reactions, such as antihistamines and mast cell stabilizers. Your healthcare provider may suggest taking medication, such as decongestants, steroids, and anti-inflammatory drops, to manage inflammation. Over-the-counter versions of these medications can also prove to be effective. Inquire with your provider regarding the most suitable choice for your needs. To alleviate the symptoms of allergic conjunctivitis, it is advisable to steer clear of the triggers responsible for your allergies.

Treatment of pink eye infection

Typically, the emphasis in treating pink eye lies on alleviating symptoms. Your service provider may suggest or advise: Utilizing synthetic tears. Gently wiping your eyelids using a damp cloth. Using cold or warm compresses multiple times throughout the day. If you have contact lenses, it is recommended that you refrain from wearing them until the treatment is finished. It is highly probable that your provider will advise you to dispose of soft contacts that you have worn before. Make sure to sanitize rigid contact lenses overnight prior to their next use. Smartly inquire with your provider if it is advisable to dispose of and replace your contact lens accessories, such as the lens case previously or during the period of illness. Furthermore, make sure to replace any eye cosmetics that were applied prior to your sickness. In the majority of situations, antibiotic eye drops are unnecessary. Given that conjunctivitis is typically caused by a virus, antibiotics will not be effective in treating it. They could potentially harm by diminishing their future efficiency or triggering an adverse reaction with medication. Instead, the virus requires a period to naturally progress. On average, this process usually requires approximately 14 to 21 days. Typically, viral conjunctivitis starts in one eye and subsequently spreads to the other eye within a few days. Your symptoms are expected to diminish naturally over time. If the cause of your viral conjunctivitis is the herpes simplex virus, you may consider using antiviral medications [4].

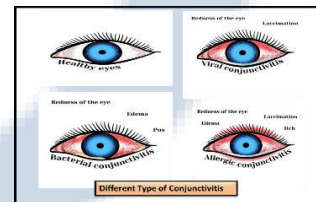


Figure 2: Type of conjunctivitis

Conclusion

Acute infective conjunctivitis is a prevalent ocular ailment encountered in the field of family practice, wherein differentiating between viral and bacterial origins based solely on clinical features can pose challenges. Research findings indicate that the optimal strategy for effectively managing this uncomplicated ailment and enhancing patient contentment is by means of systematically educating patients through the provision of written information materials.

References

- [1] Schellack N, Shirindza N, Mokoena T, Flepisi B. An overview of allergic conjunctivitis. SA Pharmaceutical Journal. 2021;88(1):21-32.
- [2] Alfonso SA, Fawley JD, Lu XA. Conjunctivitis. Primary Care: Clinics in Office Practice. 2015 Sep 1;42(3):325-45.
- [3] Alfonso SA, Fawley JD, Lu XA. Conjunctivitis. Primary Care: Clinics in Office Practice. 2015 Sep 1;42(3):325-45.
- [4] Azari AA, Barney NP. Conjunctivitis: a systematic review of diagnosis and treatment. Jama. 2013 Oct 23;310(16):1721-30.