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A SYSTEMATIC REVIEW OF CONJUNCTIVITIS

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ABSTRACT

Conjunctivitis, commonly known as pink eye, is an inflammatory condition affecting the conjunctiva – the thin, transparent membrane covering the eyes front surface and inner eyelids this ailment can be triggered by various factors, including viral or bacterial infections, allergens, and irritants. Characterized by symptoms such as redness, itching, burning sensations, and ocular discharge, conjunctivitis warrants prompt attention and accurate diagnosis from healthcare professionals. Treatment strategies range from antiviral or antibacterial medications to allergy management, with the choice cotingent on identifying the specific causative agent. Understading the contagious nature of certain types of conjunctivitis underscores the significance of adhering to proper hygiene practices to prevent its transmission. Despite its typically non-severe, conjunctivitis demands timely intervention and appropriate care for optimal resolution and prevention of complications.

KEYWORDS:- Conjunctivitis, Pink eye, Inflammation, Conjunctiva, Viral infection, Bacterial infection, Prevention, Management.

INTRODUCTION

Conjunctivitis, also called “pink eye,” is defined as an inflammation of the conjunctiva. The conjunctiva is the thin membrane that lines the inner surface of the eyelids and the whites of the eyes (Called the sclera). Conjunctivitis can affect children and adults. The most common symptoms of conjunctivitis include a red eye and discharge.

Typical symptoms include redness and a gritty sensation in your eye, along with itching. Oftena discharge forms a crust on your eyelashes during the night.

There are many potential causes of conjunctivitis, including bacterial or viral infections, allergies, or a nonspecific condition (e.g. a foreign body in the eye). All types of conjunctivitis cause a red eye, although not everyone with a red eye has conjunctivitis.

In India, over 38,000 cases of conjunctivitis were reported in Himachal Pradesh in August, according to the state’s Health Department. With persistent rain, cases of conjunctivitis, or ‘pink eye’, are on the rise in several parts of the country, including New Delhi, Chandigarh, and Gujarat. Recently, cities like Delhi, Kolkata, Vadodara, and the northeastern state of Arunachal Pradesh have seen an increase in conjunctivitis cases, particularly among children.

Typesofconjunctivitis

Conjunctivitis has main five types; viral, bacterial, allergic, toxic, and nonspecific. Most cases of infectious conjunctivitis are viral in adults and children; however, bacterial conjunctivitis ismore common in children than in adults.

1. Viral conjunctivitis

Viral conjunctivitis is highly contagious. It is spread by contact, usually with objects which have come into contact with the infected person's eye secretions. As examples, the virus can be transmitted when an infected person touches their eye and then touches another surface (eg, door handle) or shares an object that has touched their eye (eg, a towel or pillow case). Typically it is caused by virus that can also cause the common cold. A person may have symptoms of conjunctivitis alone, or as part of a general cold syndrome, with swollen lymph nodes (glands), fever, a sore throat, and runny nose.

Fig. no. 2: Viral conjunctivitis.

The most common symptoms of viral conjunctivitis include redness, watery or mucus discharge, and a burning, sandy, or gritty feeling in one eye. Some people have morning crusting followed by watery discharge, perhaps with some scant mucus discharge throughout the day. The second eye usually becomes infected within 24 to 48 hours.

There is no cure for viral conjunctivitis. Recovery can begin within days, although the symptoms frequently get worse for the first three to five days, with gradual improvement overthe following one to two weeks for a total course of two to three weeks. Some people experience morning crusting that continues for up to two weeks after the initial symptoms, although the daytime redness, irritation, and tearing should be much improved.

2. Bacteria conjunctivitis

Bacterial conjunctivitis is less common as compared to viral conjunctivitis. It affects more common in children. It is caused due to direct contact with infected person or from abnormal proliferation of the native conjunctival flora. As examples, the bacterium can be transmitted when an infected person touches their eye and then touchesanother surface (eg, door handle) or shares an object that has touched their eye (eg, a towel or pillow case).

The most common symptoms of bacterial conjunctivitis include redness and thick discharge from one eye, although both eyes can become infected. The discharge may be yellow, white, or green, and it usually continues to drain throughout the day. The affected eye often is "stuck shut" in the morning.

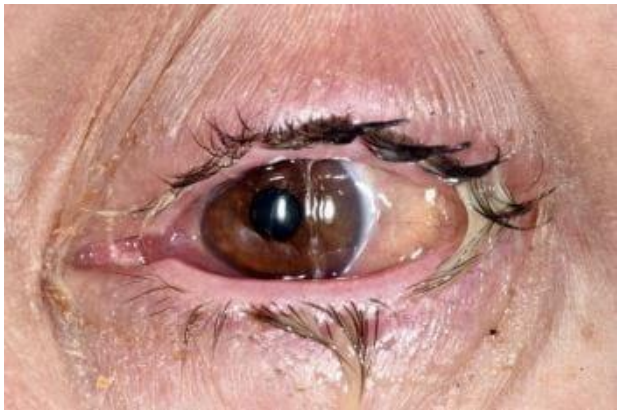

Fig. no. 2: Bacterial conjunctivitis.

Most types of bacterial conjunctivitis resolve quickly and cause no permanent damage when treated with antibiotic eye drops or ointment. All broad spectrum antibiotics are effective in treating bacterial conjunctivitis and it is unlikely that there is a significant difference among various antibiotics in achieving clinical cure.

3. Allergic conjunctivitis

The first step in the development of the allergic conjunctivitis is the penetration of the allergen through the epithelial layer. However, the mechanism of allergen transport is still unknown. Now, researchers from Japan have discovered that goblet cell-associated antigen passage formed by specialized epithelial cells called.

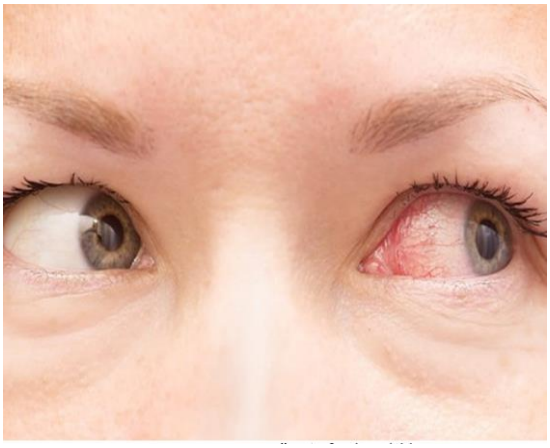

Fig. no. 3: Allergic conjunctivitis.

"Goblet cells" plays an important role in the development of conjunctival disease, and can be a novel therapeutic target for treating allergic conjunctivitis. When it comes to eye allergies, the transition from allergen contact to bothersome symptoms has always been quick, appearing within a span of a few minutes. The initial stage of allergic conjunctivitis involves the penetration of allergen through the epithelial cell layer (cells covering the outer surface of

thebody). However, the exact mechanism underlying the rapid allergen transfer has remained a mystery so far.

Fortunately, in a new ground-breaking study published in the journal JCI Insight on October 11, 2023, researchers from Juntendo University in Japan have offered a solution to this puzzle. The research team included Associate Professor Tomoaki Ando along with his colleagues, Dr. Jiro Kitaura, Dr. Meiko Kimura, and Dr. Nobuyuki Ebihara, who set out to unravel the regulatorymechanism in the development of allergic conjunctivitis. "Previously, we reported that the pollen shells and the soluble factors play nonredundant roles in the development of allergic conjunctivitis.

4. Toxic conjunctivitis

Toxic conjunctivitis (Also called toxic keratoconjunctivitis) is a chronic inflammation of the surface of the eye from an offending agent, usually a preservativeor a medication.

It has been recently realized that" long-term use of topical eye medications may induce ocular surface changes including dry eyes, conjunctival inflammation, ocular surface fibrosis, and scarring. Another area where the side effects of topical eye drops cause significant ocular morbidity is their use in glaucoma and in patients who have undergone glaucoma surgery.

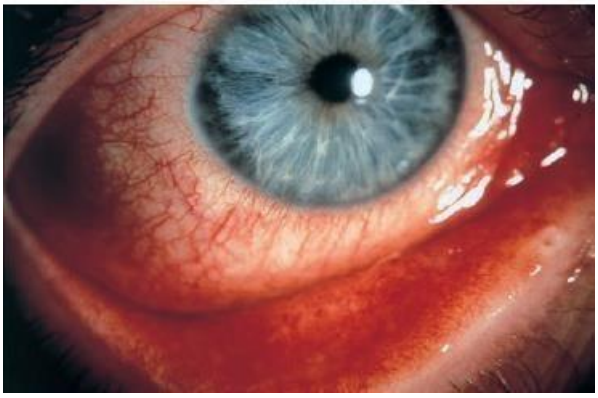

Fig. no. 4: Toxic conjunctivitis.

5. Nonspecific conjunctivitis

Is possible to develop a red eye and discharge that is not causedby an infection or allergy or toxicity.

Fig. no. 5: Nonspecific conjunctivitis.

The most common causes include one of the following

1. People with a dry eye may have chronic or intermittent redness or discharge.
2. A person whose eyes are irrigated after a chemical splash may have redness and discharge.
3. A person with a foreign body (eg, dust, eyelash) in the eye may have redness and dischargefor 12 to 24 hours after the object is removed.

All of these problems generally improve spontaneously within 24 hours.

Conjunctivitis diagnosis

The diagnosis of conjunctivitis most often requires an examination by a health care provider or eye care specialist because many conditions can cause eye redness.

The health care provider may ask the following questions

- When did the eye problem begin? Has anyone else in the house had a similar problem?
- Is there discharge from the eye continuously? Is the discharge watery, thin, and mucus-like, or thick and sticky?
- Are there any non-eye symptoms (eg, coughing, fever, sore throat, nasal congestion, sneezing)?
- Are the eyes extremely itchy or is there a history of seasonal allergies?

Referral to eye care specialist

People with the following signs and symptoms may have a more serious problem and should be evaluated immediately by an eye specialist

- Eye tenderness
- Difficulty seeing clearly
- Difficulty keeping the eye open or sensitivity to light
- Severe headaches with nausea

- Recent trauma to the eye
- Use of contact lenses

Conjunctivitis treatment

The treatment of conjunctivitis depends upon the cause. For this reason, it is important to have the correct diagnosis before treatment begins.

Viral conjunctivitis treatment

A topical antihistamine/decongestant eye drop may help to relieve the irritation of viral conjunctivitis. These drops are available without a prescription in most pharmacies. However, particular care must be taken to avoid spreading viral infections from one eye to the other. Apply drops only to affected eye and wash hands thoroughly after application. Similar to cold medicines, this treatment may reduce the symptoms but does not shorten the course of the infection.

Another option is to use warm or cool compresses, as needed.

Viral conjunctivitis is similar to a cold because it spreads easily between people. Younger children, who may not remember to wash their hands or avoid touching their eyes, should probably not attend school until the discharge has resolved. Older students or adults may choose to attend school/work, although they should limit close contact with others.

The irritation and discharge may get worse for three to five days before getting better, and symptoms can persist for two to three weeks.

Bacterial conjunctivitis treatment

Bacterial conjunctivitis is usually treated with an antibiotic eye drop or ointment. When started early, treatment helps to shorten the duration of symptoms, although most cases do resolve spontaneously if no treatment is used.

Adults

Adults are usually treated with an antibiotic eye drop or ointment for five to seven days. Redness, irritation, and eye discharge should begin to improve within 24 to 48 hours. If there is no improvement or if the condition worsens within this time, the person should be evaluated by an ophthalmologist.

Nonspecific conjunctivitis treatment

The conjunctiva heals quickly after it is injured, and nonspecific conjunctivitis usually resolves within a few days without any treatment. However, the eye may feel better faster when it is treated with a lubricant, such as drops or ointments. These products are available without a prescription in most pharmacies. Preservative-free preparations are more expensive and are necessary only for people with a severe case of dry eye and those who are allergic to preservatives.

CONCLUSION

Most viral conjunctivitis cases are caused by adenoviruses. In viral conjunctivitis, there is no role for the use of topical antibiotics, and they should be avoided owing to the fact that they have adverse treatment effects. Viral conjunctivitis is diagnosed by using a rapid antigen test, and abstaining from the inappropriate use of antibiotics is an appropriate strategy. Nontherapeutic viral conjunctivitis, followed by bacterial conjunctivitis, is the more common cause of infectious conjunctivitis. Bacterial pathogens are isolated in only 50% of cases of suspected conjunctivitis, and 60% of bacterial conjunctivitis is self-limited and does not require medical treatment, as clinically proved.

Relying on the signs and symptoms alone frequently leads to an inaccurate diagnosis. Physicians must be alert and not overlook sight-threatening conditions with similarities to conjunctivitis.

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