MANAGING CONTACT LENS COMPLICATIONS

An overview of issues from common to serious

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Contact lenses provide a convenient and effective means of vision correction, but they can sometimes result in a variety of issues. As optometrists, it is crucial to recognize, prevent, and manage these problems to ensure optimal ocular health for our patients. This article provides an overview of common and serious contact lens-related complications, along with strategies for managing them effectively.

DRY EYE

Dry eye is one of the most common issues experienced by contact lens users. It can cause fluctuating vision, irritation, redness, dryness, and a gritty sensation in the eyes. Factors contributing to dry eye include autoimmune conditions, medication use, meibomian gland dysfunction, incomplete blinking, and improper lens use and hygiene.[1,2]

Management Strategies

High water content and daily disposability are two important contact lens qualities to recommend to patients with dry eye. Preservative-free lubricating eye drops, cyclosporine 0.05%, steroids, lid hygiene, punctal plugs, intense pulsed light therapy, radiofrequency, low-level light therapy, amniotic membranes, autologous serum tears, and scleral lenses are other methods of management, depending on the severity of the patient's symptoms.

STERILE CORNEAL INFILTRATES

Contact lens wearers may develop small, gray-white bumps on the eye known as corneal infiltrates. Signs and symptoms of these inflammatory cells include redness, discomfort, and blurred vision. Sterile corneal infiltrates can be caused by hypoxia or an immune reaction to the contact lens.

Management Strategies

Contact lens use should be discontinued. Topical antibiotics should be prescribed if an epithelial defect is present; otherwise, steroid drops will help reduce the inflammation. If there is a recurrence of infiltrates once lens use is discontinued and antibiotics are taken, the contact lens fit, material, wearing schedule, and cleaning regimen should also be reassessed.[2-4]

GIANT PAPILLARY CONJUNCTIVITIS

Proteins deposited on contact lenses can cause allergic reactions over time, leading to giant papillary conjunctivitis (GPC). Also, long-term contact lens use can lead to inflammation of the upper eyelid, causing itching, mucous

discharge, larger superior conjunctival papillae, and foreign body sensation. Papillae are generally no bigger than 0.3 mm, are present in the upper tarsus of the conjunctiva, and progress toward the lid margins.[5]

Management Strategies

Patients with GPC should discontinue contact lens wear, practice good lid hygiene, and use cool compresses. Preservative-free artificial drops/tears can be prescribed for better comfort. In moderate to severe conditions, a low-dose steroid can be prescribed over a course of 6 weeks.

Once the condition resolves, switching the patient to daily disposable lenses with a lower modulus is recommended. If the patient is not a candidate for daily disposable lenses, a hydrogen peroxide care regimen should be used. Patients who wear rigid gas permeable lenses should have their edge lift and thickness reduced.

CORNEAL NEOVASCULARIZATION

Corneal neovascularization can result from various insults, such as infection, inflammation, hypoxia, and/or trauma—especially in the case of extended contact lens wear. Superficial neovascularization up to 1 mm tends to be more prominent in contact lens users. Studies show that up to 30% of contact lens wearers may develop corneal neovascularization.[3,6]

Management Strategies

Patients with corneal neovascularization should be switched to a higher oxygen permeability lens material and be fit with increased movement. The use of extended wear lenses should be avoided. Topical corticosteroids and NSAIDs can reduce inflammation and vascular growth.

SOLUTION HYPERSENSITIVITY

Common signs and symptoms of contact lens solution hypersensitivity include redness, swelling, itchiness, and watery eyes.[6] Hypersensitivity reactions can occur due to preservatives in contact lens solutions. Patients with a history of atopy, allergy, or eczema are more likely to develop a delayed reaction.[6]

Management Strategies

Switching patients to a preservative-free solution, using daily disposable lenses to reduce the risk of irritation and preservative-free artificial tears to alleviate discomfort, and using cold compresses can help reduce swelling and irritation.

INFECTIOUS KERATITIS

Infectious keratitis is painful and sight-threatening. Typical signs and symptoms include severe pain, decreased vision, light sensitivity, discharge, and redness. Focal, irregular stromal infiltrates larger than 1.5 mm and diffuse infiltration with a break in the epithelium can occur in the cornea.[6] Lid edema, diffuse or limbal hyperemia, anterior chamber reaction, and hypopyon may also be present.[6]

Management Strategies

Broad-spectrum antibiotics should be prescribed if an infection is present. Steroids should be added to the treatment regimen to prevent scarring and reduce inflammation once the infection is under control.

RED EYE

Red eye usually occurs with overnight contact lens wear. Signs and symptoms include moderate to severe circumlimbal redness, irritation, pain, photophobia, and watery eyes. These signs and symptoms can mimic other conditions such as infectious or inflammatory keratitis, dry eye disease, anterior uveitis, and episcleritis. However, in the case of acute red eye due to contact lens wear, multiple focal infiltrates may be seen in the midperiphery and periphery of the cornea. Limbal hyperemia, corneal edema, mild anterior chamber reaction, and mild to moderate blepharospasm may also be present.[7]

Management Strategies

Contact lens wear should be discontinued. Antibiotics and/or cycloplegics can be prescribed if infiltrates are present, and steroids are warranted if the patient's epithelium is intact. Patients can be switched to daily disposable lenses and a preservative-free care regimen. Most episodes of red eye resolve within 3 days but can take up to 6 weeks to completely resolve, at which point contact lens wear can be reinstated.

PREVENTIVE MEASURES

It's essential to educate patients on the importance of proper cleaning and disinfecting of contact lenses to reduce the risk of infections and other potential issues. Additionally, consider recommending preservative-free artificial tears and care systems and emphasizing the value of routine checkups for early detection and management of complications.

By remaining proactive and attentive, optometrists can help patients fully enjoy the advantages of contact lenses while safeguarding their ocular health. ■

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