

Dry Eyes Associated with Blepharospasm

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Dry eyes are not an uncommon finding in patients with blepharospasm. While the precise mechanism for ocular dryness in essential blepharospasm is not known, it is believed to be multifactorial and may be related to and exacerbated by forceful eyelid closure and increased blinking frequency. Additionally, irritation of the ocular surface from a dry eye condition may result in secondary blepharospasm.

The tear film is composed of an external lipid component, an aqueous component, and a mucin component. The aqueous component is produced by the lacrimal gland (tear producing gland) and contains various growth factors, electrolytes, and anti-bacterial substances. The meibomian glands along the eyelid margin produce the lipid component, which plays an important role in slowing the evaporation of tears, lubrication of the surface of the eye, and stabilization of the tear film.

The causes of dry eye can be divided into decreased aqueous tear production and increased evaporative tear loss/dysfunction. Causes of reduced tear production include decreased secretion, tear duct blockage, lacrimal gland disease, and medication side effects. Evaporative forms of dry eye disease include increased exposure of the eye surface resulting from eyelid abnormalities, lipid tear layer deficiency with an unstable tear film, and chronic allergy, toxicity, or inflammation. Changes in tear composition and tear film quality as a result of meibomian gland dysfunction and blepharitis is a common and important cause of evaporative dry eye.

Objective findings of dry eye are usually less than the frequency of complaints in blepharospasm patients with dry eyes. Symptoms of ocular irritation, burning, foreign-body sensation, and blurred vision can be associated with ocular dryness. These symptoms tend to be greatest at the end of the day or after prolonged use of the eyes. Signs of dry eyes can include redness of the eye, decreased tear volume, debris in the tear film, and erosions of the epithelial surface of the cornea. In patients with severe dry eyes, filaments and mucous plaques may be present.

The primary goals of treatment focus on improvement of symptoms, improvement of the stability of the tear film, and reversal of damage to the ocular surface. When meibomian gland dysfunction is present, warm compresses to the eyelids can be very beneficial.

The most common therapy is the application of artificial tear supplements topically to the ocular surface. Numerous preparations are available and include artificial tears, gels, and lubricating ointments. Ointments and higher-viscosity formulas remain in the eye for a longer period of time, providing a longer interval of symptomatic relief. These more viscous formulations, however, may be associated with an increased incidence of blurry vision and lash residue. Additionally, artificial tears may contain preservatives that can produce corneal irritation, and any patient that requires application of tear substitutes more than four times a day should use preservative-free formulations.

Occlusion of the puncta (drainage holes for the tears) utilizing silicone plugs, cautery, or laser may be beneficial by helping to retain and preserve tears. Occlusion of the lower punctum may be sufficient, but occlusion of both the upper and lower puncta may be necessary in severe cases. Humidifiers and moisture shields also reduce the evaporation of tears and may be a useful adjunctive treatment. A tarsorrhaphy (suturing part of the eyelids closed) may be useful by reducing the surface area of exposed ocular surface, thereby reducing the evaporation of tears. However, a tarsorrhaphy is usually reserved for patients with severe exposure and decompensation of the ocular surface.

Recent studies have suggested a role of inflammation in dry eye, with suppression of secretion and subsequent damaging effects on the lacrimal gland and ocular surface. Unpreserved topical steroids have been shown to be effective in reducing inflammation and restoring a healthy ocular surface in patients with dry eye. However, side effects, including increased risks of glaucoma, cataract, and infection, have limited its widespread use. Topical cyclosporine (Restasis) has been shown to reduce cell-mediated inflammatory responses and thereby effectively improve the ocular signs and symptoms of dry eyes. Doxycycline, azithromycin (Azasite), and omega-3 fatty acids have been reported to improve symptoms and tear film stability via an anti-inflammatory effect.

Autologous serum is an additional treatment option for patients with dry eye, as serum contains essential growth factors that are normally present in tears. Studies have shown improved healing of the ocular surface and enhanced mucin production in dry eye patients treated with autologous serum. The main disadvantage of this therapy is the time-consuming nature of its preparation.

In summary, as our understanding of the mechanisms of dry eye continues to advance, treatment strategies continue to evolve. Dry eyes associated with blepharospasm can be a challenging problem. Numerous treatment options are available, and various trials with careful monitoring and assessment of treatment response may be necessary to find an optimal regimen that provides maximum relief. A meticulous examination to accurately identify the contributing factors and addressing these components is important. In general, mid- to high-viscosity compounds in combination with aggressive lid hygiene and warm compresses are likely to produce a greater reduction in dry eye symptoms.