A 62-year-old man underwent uneventful, spherical wavefront-optimized LASIK 10 years ago for the treatment of -5.00 D of myopia in both eyes. The flap was created with a microkeratome. One year postoperatively, the patient’s visual acuity measured 20/20 OU.

Now, the patient calls the office with a complaint of photophobia and decreased vision with pain in his right eye. Upon examination, the visual acuity of his right eye has dropped to 20/80, and he cannot tolerate light well. The cornea shows decreased sensation (Figure). The left eye is normal.

The patient reports having been placed on etanercept (Enbrel; Amgen) by his rheumatologist for psoriatic arthritis, which is systemically active at this point. The examination is otherwise uneventful.

How would you proceed with ophthalmic and systemic treatment?

—Case prepared by Karl G. Stonecipher, MD.

PREEYA K. GUPTA, MD

The patient’s symptoms are consistent with herpes simplex virus (HSV) stromal keratitis. Given the recent initiation of immunosuppressive therapy to block tumor necrosis factor (TNF), the patient is at increased risk of HSV infection and/or reactivation. The presence of a LASIK flap complicates the case in that the flap interface can be an additional site for the collection of inflammation and scar formation.

In general, I treat HSV stromal disease with topical steroids to suppress the immune reaction, and I start patients on concomitant oral antiviral therapy (such as valacyclovir, famciclovir, or acyclovir) to prevent reactivation of the virus. Post-LASIK patients with HSV are at great risk of ocular surface disease—dry eye and neurotrophic keratitis. Aggressive lubrication with preservative-free artificial tears, an artificial tear ointment, and punctal occlusion as needed is therefore important. Topical steroids should be used four to six times per day to achieve initial control of the inflammation, followed by very gradual tapering. HSV keratitis often recurs if the taper is too fast, and some patients may require long-term therapy with a low dose of topical steroids.

It would be important to address the expectations of this patient, who was used to spectacle independence. HSV keratitis is a frustrating condition for patients, and close observation is important.
The preoperative assessment of patients considering laser vision correction (LVC) should include a discussion of their systemic conditions. For many years, patients with a history of systemic inflammatory conditions were considered to be poor candidates for LVC. A number of studies, however, have found that patients who have stable and controlled inflammatory conditions, without a recent flare, can be suitable candidates for LVC.1,2

In this case, the patient developed psoriatic arthritis many years after LVC. Although the case presentation does not mention a previous history of HSV, the presence of a disciform inflammation within the cornea is strongly suggestive of HSV stromal keratitis. Patients who are immunosuppressed may be at elevated risk of developing this corneal condition, and the presence of a LASIK flap should not influence the treatment plan.

The Herpetic Eye Disease Study (HEDS) determined that topical steroids and trifluridine work best for the treatment of HSV stromal keratitis. The study did not find that oral acyclovir hastened the resolution of an ongoing episode.3 The HEDS did determine, however, that oral acyclovir significantly reduced the risk of recurrent HSV stromal disease.4 With these findings in mind, I would start the patient on topical steroids, but I would prescribe topical ganciclovir instead of trifluridine due to a lower risk of corneal toxicity compared to the former. I would also have the patient begin taking oral antivirals to prevent a recurrence of the condition. In my opinion, there is no role for lifting the flap.

JENNIFER LOH, MD

With LASIK approaching its 20th year since FDA approval, it is not surprising that some patients who were healthy and had essentially no medical history at the time of LVC are developing systemic illnesses. Most refractive surgeons have previously healthy patients who have enjoyed many years of good vision after LASIK but are now developing an autoimmune process such as psoriatic arthritis.

Etanercept is a fusion protein of the extracellular ligand-binding portion of the human TNF receptor p75 and the Fc portion of human IgG1. This agent inhibits the action of both TNF-α and TNF-γ (important proinflammatory cytokines). The drug is increasingly being used in the management of rheumatoid arthritis, psoriatic arthritis, and ankylosing spondylitis, with good outcomes in both open-label and randomized controlled trials.5-8 Potentially serious but uncommon adverse effects of sepsis, reactivation of tuberculosis, worsening of congestive cardiac failure, and exacerbation of multiple sclerosis as well as reports of less serious skin reactions, lymphoma, and autoantibodies have been published. There has also been a reported case of uveitis after etanercept treatment for ankylosing spondylitis.9

There is little in the literature regarding the development of HSV keratitis after the initiation of etanercept therapy.10 The diagnosis of HSV keratitis in an immune-suppressed patient is clinical. Viral cultures and, if possible, polymerase chain reaction analysis would be of potential benefit but should not delay treatment. My suggestion would be to begin oral acyclovir 800 mg five times a day as well as aggressive treatment with a topical steroid such as difluprednate ophthalmic emulsion 0.05% (Durezol; Alcon) four times per day. Close observation to ensure that his response to this treatment was appropriate would be required. A slow taper of the topical steroid combined with conversion to a maintenance dose of acyclovir would depend on the clinical examination. It would also be necessary to guard against the rare possibility of psoriatic keratitis, which would require even more aggressive immunotherapy, but I would not stop oral antiviral prophylaxis.

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When patients respond to a combination of antiviral and topical steroid treatment, they may have symptomatic dry eye disease associated with their neurotrophic cornea. Adjunctive therapies such as autologous serum tears, bandage contact lenses, and amniotic membranes are extremely helpful tools with which to hasten the healing of the ocular surface.

Unfortunately, many patients may not fully recover their post-LASIK visual acuity due to scarring and long-term disruptions of the ocular surface. Even a small decrease in vision may be exceedingly frustrating to this group of refractive surgery patients who are very discriminating and have high visual demands. Scleral contact lenses such as the BostonSight PROSE (prosthetic replacement of the ocular surface ecosystem) can be extremely helpful for visual rehabilitation and may provide some relief if the patient is suffering from ocular surface discomfort. ■


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