LASIK WITH DRY EYE?

Pre-op diagnosis, careful management make some patients good candidates

by Howard Larkin in Chicago

The few patients who develop severe chronic dry eye symptoms after refractive surgery can be the most dissatisfied in your practice, Christopher J Rapuano MD told the refractive surgery subspecialty day of the annual meeting of the American Academy of Ophthalmology (AAO).

Pain, photophobia and visual disturbances are typical, with many also experiencing loss of visual function for reading, driving and other daily activities. Some become depressed or even suicidal. Studies also show that preoperative dry eye may be the biggest risk factor for postoperative dry eye problems. So should LASIK be avoided in dry eye patients?

For patients with active dry eye signs and symptoms, the answer is definitely yes, said Dr Rapuano, who is director of the cornea service and co-director of refractive surgery at Wills Eye Institute, Philadelphia, US.

“Refractive surgery is an elective procedure. We want to enhance a patient’s lifestyle and well-being, not make them miserable.”

Patients with post-LASIK dry eye are also more likely to regress. So it is not just a quality of life issue, it is also a refractive issue, Dr Rapuano commented.

However, if dry eye is successfully controlled with treatment, some patients may become LASIK candidates, Dr Rapuano said. Preoperative counselling and informed consent are essential to establish reasonable outcomes expectations.

Eric D Donnenfeld MD went further, noting that dry eye patients often seek LASIK because they cannot wear contact lenses. He believes that proper pre-treatment to control dry eye, surgical approaches designed to minimise nerve damage and post-surgery dry eye treatment can reduce the risk to an acceptable level.

“Yes, we should exclude some dry eye cases, but that is the exception rather than the rule. The majority of patients with dry eye are excellent candidates for LASIK,” said Dr Donnenfeld, who is a clinical professor at NYU Medical School in New York City, US.

Dr Donnenfeld also screens for patients at risk of dry eye using tear osmolarity, which provides instant results. Another test in the pipeline will quantify tear film issues by measuring MP9 concentration. Tear film breakup time and Schirmer tests are also useful.

Treatment to restore the corneal surface and improve tear film stability include artificial tears for lubrication, topical cyclosporine or topical steroids for inflammation and nutritional supplements.

“I like to look at the Hartman-Shack. If you see a drop out at the front, the surface is damaged enough that I am not going to get a reading and I am not going to get a good treatment.”

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“Pure omega-3 reduces inflammation and improves meliobion gland secretions,” Dr Donnenfeld said.

Any lid disease also should be treated before surgery is considered, Dr Rapuano said. Hot compresses or lid scrubs, topical antibiotics and oral doxycycline help. Surgery can usually be safely performed if only mild residual dry eye signs remain after treatment, though patient counselling and informed consent is a must. However, if significant dry eye signs or symptoms persist, surgery is usually best avoided, he said.

Dr Donnenfeld also recommends tailoring the LASIK procedure to minimise dry eye. Severing corneal surface nerves when the flap is created reduces corneal sensitivity and is thought to interfere with the tear production feedback loop, he said. Ablating the neural plexus may exacerbate the problem.

Femtosecond lasers help by allowing thinner, smaller planar flaps, Dr Donnenfeld noted.

“We used to do a 9.5mm flap; now we are down to 8.3mm. You cut the surface area in half and you get much less dry eye.”

He also makes a bevel side cut, which promotes recovery of corneal sensitivity by increasing corneal nerve apposition.

However, it has been thought that a superior flap interferes with corneal nerves less, more recent studies suggest there is no difference in outcomes between nasal or superior hinge.

After surgery, continuing topical lubricants, nutritional supplements and immunosuppressive therapy improves visual outcomes and keeps dry eye at bay. Dr Donnenfeld said. Even patients with autoimmune disease have had good LASIK results with appropriate management, he noted.

Another advantage to treating patients with dry eye before surgery, and counselling them on their post-surgery risk, is it sets appropriate expectations, Dr Rapuano said.

“You need to remind them after surgery that they are different from their 50 friends who had LASIK but did not have dry eye. You need them to remember that they had this problem before.”