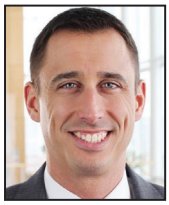
COLLABORATIVE CARE WITH SMILE

Tips on helping new candidates benefit from minimally invasive laser refractive surgery.

BY JUSTIN SCHWEITZER, OD, FAAO



Small incision lenticule extraction (SMILE, ZEISS) is a laser refractive procedure designed for patients with myopia (-1.00 to -10.00 D, cylinder up to -3.00 D, MRSE up to -10.00 D). In this procedure, the surgeon uses the laser to make a lenticule in the corneal stroma, and then the lenticule is removed at 60 to 90° through a small incision, reshaping the cornea to correct vision. SMILE is the first minimally invasive laser refractive surgery, performed with a small incision and no flap.

As an optometrist at Vance Thompson Vision, I had the opportunity to be part of the FDA clinical trial for SMILE.[1] This technology is an exciting option for many refractive candidates, including patients for whom LASIK may not be an option, and its comanagement is very similar to managing other corneal refractive procedures.

Candidates and Outcomes

One advantage of SMILE is that it opens new doors for some of our patients who may not be perfect candidates for other corneal refractive procedures. For example, ocular surface disease can be exacerbated by the severing of corneal nerves in a procedure such as LASIK. With SMILE, there is not as much disruption to the corneal nerves. The integrity of the cornea remains intact, which may reduce the chance of adverse effects on the ocular surface. Although we do not know exactly how SMILE compares with LASIK in its effects on the ocular surface, some current studies are clarifying those differences, including specific problems related to innervation.[2,3]

Long-term visual outcomes with SMILE are very similar to LASIK. In our practice, patients have had exceptional visual outcomes with this procedure.

The long-term safety of SMILE is well established.[4,5] The FDA approved SMILE in 2016, and it has been used in more than 70 countries and more than 2 million cases worldwide.[1] The minimally invasive nature of the procedure has a safety profile similar to other corneal refractive procedures.

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Collaborative Care

Collaborative care for SMILE is very similar to any other corneal refractive procedure. If you have managed LASIK or PRK, then very little new learning is needed. Collaborative care fees in our center and with our outside referral network are very similar to other refractive procedures as well.

I see SMILE patients for postoperative follow-up visits at 1 day, 1 week, 1 month, 3 months, 6 months, and 1 year. In the early postoperative period, the patient takes an antibiotic and a steroid, so I manage that treatment and watch for any signs of infection or VA changes. In later follow-up visits, I monitor VA, the ocular surface, and any changes to topography. These patients may be enhanced around 6 months to 1 year after SMILE. When an enhancement is needed, PRK is the preferred corneal refractive procedure.

The minimally invasive SMILE procedure has a lot to offer patients, some of whom may have not been considered as LASIK candidates. For optometrists already involved in the collaborative care of patients who are having corneal refractive surgery, the model is very similar and easy to adopt. Professionally, it also helps me meet my goal of working on the forefront of vision care. ■

CASE STUDY

The patient: A 39-year-old man came to our practice for LASIK. He had worn contact lenses for many years, but had to give them up at age 32 when his dry eye disease made them too uncomfortable for all-day wear. Never happy in glasses, he finally decided to have his vision corrected surgically.

The patient had dry eye disease, caused by meibomian gland dysfunction (MGD). He had been taking omega-3 supplements and using warm compresses for years. Still, because he spent many hours on a computer every day, he experienced little relief. Recently, he had the LipiFlow procedure (Johnson & Johnson Vision) for treatment of his MGD.

Current vision correction: The patient wore eyeglasses with a refraction of -3.50 sph OD and -3.75 sph OS.

Preoperative measurements: His corneas were not thin, higher-order aberrations were minimal, and topography was smooth (Figure).

SMILE candidacy: The patient's refraction was within SMILE guidelines (-1.00 to -10.00 D, cylinder up to -3.00 D, MRSE up to -10.00 D). I was a bit concerned about exacerbating his ocular surface disease with LASIK, so I discussed SMILE and PRK as corneal refractive options. He had undergone treatment for his ocular surface disease and was managing it with no new signs on examination. He had no new symptoms or complaints with his vision. Taking all of this into consideration, I told the patient I believed he would be a good candidate for SMILE.

Discussion: The patient's history of ocular surface disease led me to have a discussion with him about SMILE and PRK. He was aware of both procedures when he presented, and had some concerns about the length of recovery with PRK. He ultimately decided on SMILE because of the quicker visual recovery than PRK.

Procedure: The patient underwent an uncomplicated SMILE procedure. He was prescribed a topical antibiotic and topical steroid to use at home.

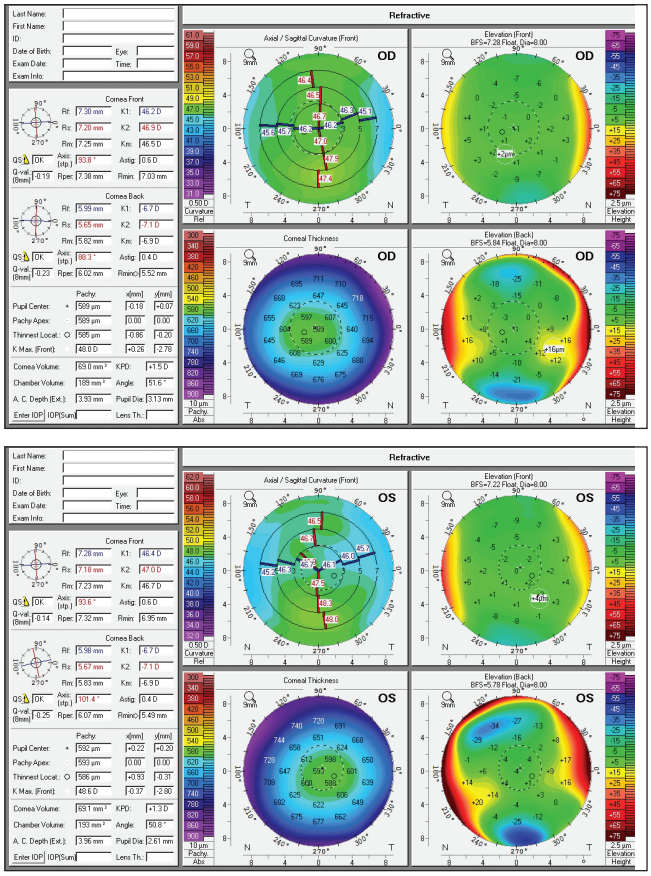

Figure. The patient's corneas were not thin, higher-order aberrations were minimal, and topography was smooth.

Outcomes: At day 1, VA was 20/25 OU. It was 20/20 OU at 1 week and 20/20 OU at 2 weeks. The patient recently presented for his 1-month examination, and his vision continued to be 20/20. He reported no new symptoms of ocular surface disease. Clinical examination of the anterior segment showed no exacerbation of his ocular surface disease. He was thrilled to reduce his need for glasses.

1. Data on file. Carl Zeiss Meditec, Inc.
2. Shen Z, Zhu Y, Song X, et al. Dry eye after small incision lenticule extraction (SMILE) versus femtosecond laser-assisted in situ keratomileusis (FS-LASIK) for myopia: a meta-analysis. *PLoS One.* 2016;11(12):e0168081.
3. Ganesh S, Gupta R. Comparison of visual and refractive outcomes following femtosecond laser- assisted lasik with smile in patients with myopia or myopic astigmatism. *J Refract Surg.* 2014;30(9):590-596.
4. Blum M, Täubig K, Gruhn C, et al. Five-year results of small incision lenticule extraction (ReLEx SMILE). *Br J Ophthalmol.* 2016;100(9):1192.
5. Denoyer A, Landman E, Trinh L, et al. Dry eye disease after refractive surgery: comparative outcomes of small incision lenticule extraction versus LASIK. *Ophthalmology.* 2015;122(4):669-676.

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