The How and Why of PTK for Treating Corneal Dystrophies
Melissa Barnett, O.D.

Excimer laser phototherapeutic keratectomy (PTK) can be useful in the management of corneal dystrophies including granular, Reis-Bückler, lattice, and epithelial basement membrane dystrophy. PTK can improve vision by correcting corneal irregularities and preventing recurrent erosions. Treatment is especially effective for anterior dystrophies to clear corneal opacities and to stabilize the corneal epithelium. PTK has been approved to treat the anterior one-third of the cornea. If the goal of PTK is to remove opacities and correct refractive error, it is referred to as PRK or PTK / PRK.

In addition to providing significant visual improvement, PTK may be able to delay a corneal transplant, which has a higher rate of complications. A benefit of PTK is that multiple treatments are possible; it can be utilized after corneal transplantation on the corneal graft if the corneal dystrophy has recurred.

A laser with a large spot size is used for a central ablation of 6.5-7.0mm that may blend out to 10mm of peripheral ablation. The treatment is centered on the visual axis. After instilling topical anesthetic, a lid speculum is used and the patient is asked to fixate on the fixation light. Either mechanical epithelial debridement or central, trans-epithelial ablation can be performed. If the corneal surface is irregular, saline or methylcellulose can be used in order to smooth out surface irregularities prior to ablation. Ablation depth varies due to the type of treatment and purpose of treatment.

According to Christopher Rapuano, M.D. (Wills Eye Institute), the desired endpoint is a “much clearer and smoother cornea, but not necessarily a crystal clear cornea.”

References

Melissa Barnett, OD, FAAO is a principal optometrist at the UC Davis Medical Center in Sacramento, where she performs primary and medical eye examinations and fits contact lenses including specialty contact lenses in addition to teaching optics and contact lenses to ophthalmology residents. She lectures and has been published on topics including dry eye, anterior segment disease, contact lenses, corneal collagen cross-linking and creating a healthy balance between work and home life for women in optometry. She is also a spokesperson for the California Optometric Association and has appeared on several television shows. In her spare time she enjoys cooking, yoga and spending time with her husband, Todd Erickson, also an optometrist, and two sons, Alex, age six and Drew four.

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