CASE REPORT

Fibrin glue to manage flap necrosis secondary to late-onset infectious keratitis after laser in situ keratomileusis

Marie Verstappen, MD, Guillaume Debellemanière, MD, PhD, Sarah Moran, MD, Damien Gatinel, MD, PhD

A 52-year-old man developed flap necrosis secondary to late-onset infectious keratitis after laser in situ keratomileusis. Management involved a flap lift and irrigation of the interface with fortified antibiotics. The flap was then replaced, and fibrin glue was placed at the flap edges and over the necrotic area to seal it completely. Two months after surgery, the corrected distance visual acuity was 20/20 and a slitlamp examination showed no signs of infection. Localized flap necrosis can be adequately managed with fibrin glue, including in cases of herpes simplex virus keratitis.

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CASE REPORT

A 52-year-old man presented to the emergency department with a 2-day history of a red painful eye and photophobia. He admitted to having previous intermittent episodes of pain and redness in the same eye in the preceding months. His ophthalmic history was significant for a bilateral LASIK procedure 10 years previously, followed by a retreatment 6 years later. On presentation, the corrected distance visual acuity (CDVA) was 20/25 with a refraction of −1.75 × 135 in the right eye and 20/20 with a refraction of +0.75 −0.50 × 110 in the left eye.

Slitlamp examination showed an inferior corneal infiltrate in the flap interface with an overlying area of localized flap necrosis, accompanied by corneal edema and anterior chamber reaction. There was no evidence of chronic blepharitis or previous eye infection. Examination of the fellow eye was normal. Anterior segment optical coherence tomography (AS-OCT) confirmed the localized area of flap necrosis (Figure 1).

The diagnosis was late-onset post-LASIK infectious keratitis. Corneal scraping was performed, followed by a flap lift and irrigation of the interface with fortified antibiotics (Figure 2). The flap was then replaced, and fibrin glue was placed at the flap edges and over the necrotic area to seal it completely. A bandage contact lens was then applied. Vancomycin 50 mg/mL, piperacillin 20 mg/mL, and gentamicin 15 mg/mL were prescribed hourly for 48 hours and tapered slowly in the days after, for a total duration of 2 weeks. The clinical improvement was rapid. Bacterial and fungal cultures were negative; however, a polymerase chain reaction assay was positive for herpes simplex virus (HSV). Although clinical improvement was evident, given the positive polymerase chain reaction result, valaciclovir 1 tablet 3 times a day was prescribed for 2 weeks.

Two months later, the patient had a CDVA of 20/20 with a refraction of +1.50 −0.75 × 85 and +0.75 −0.25 × 105 in the right eye and left eye, respectively. Slitlamp examination showed no signs of epithelial ingrowth and no signs of infection. AS-OCT confirmed adequate sealing of the area of flap necrosis (Figure 3).

DISCUSSION

Infectious keratitis after LASIK is an infrequent and potentially sight-threatening complication. The incidence of infection after LASIK varies between 1 in 1000 procedures and 1 in 5000 procedures, and the number of new cases is decreasing.1,3 Usually most infections appear within a few weeks after surgery, and the incidence of delayed bacterial keratitis after LASIK is low.4,5 The organisms seen in late-onset infectious keratitis are usually opportunistic.3,5

The incidence of herpetic keratitis after LASIK is twice the incidence in the general population.1 Herpetic keratitis has been reported in LASIK patients with or without a history of herpetic disease, usually between 2 weeks and 2 months after surgery, and has been responsible for flap...
perforation post LASIK performed after penetrating keratoplasty.8

As required by the American Society of Cataract and Refractive Surgery white paper,9 we took corneal scrapings for stains and cultures and performed a flap lift. This was followed by irrigation of the interface with an antibiotic solution to allow greater antibiotic penetration and to decrease the infectious load. We used fibrin glue to avoid the risk for secondary epithelial ingrowth and to fill in the area of flap necrosis. This technique has been described in the literature and has been shown to prevent further epithelial ingrowth.10

The clinical presentation and the favorable evolution under topical antibiotics alone are in favor of an episode of acute bacterial keratitis complicating preexisting HSV keratitis episodes responsible for the localized flap necrosis. Corneal scraping and investigation for HSV DNA by polymerase chain reaction should be performed in cases of late-onset infectious keratitis after LASIK. Localized flap necrosis can be adequately managed with fibrin glue, even in the presence of HSV keratitis.

REFERENCES


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