Hypopyon Uveitis Following LASIK in a Patient With Ulcerative Colitis

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ABSTRACT

PURPOSE: To present a case of unilateral hypopyon uveitis that began 15 days after uneventful bilateral LASIK in a 24-year-old man with an undisclosed history of ulcerative colitis.

METHODS: Case report.

RESULTS: The hypopyon uveitis completely resolved after treatment with aggressive topical and oral steroid agents in combination with topical antibiotic coverage.

CONCLUSIONS: Although rare, visually significant hypopyon uveitis may arise after LASIK in the setting of ulcerative colitis and positive human leukocyte antigen (HLA) B27. Early recognition and treatment can result in an excellent outcome. The exact relationship between hypopyon uveitis and LASIK is impossible to ascertain. [J Refract Surg. 2012;28(8):589-591.]

doi:10.3928/1081597X-20120722-02

Ulcерative colitis is a form of inflammatory bowel disease (IBD) characterized by inflammation of the rectum that extends proximally, without interruption, to involve the colon in varying degrees. Although the etiology of ulcerative colitis remains unknown, many hypothesize that environmental factors, in combination with an altered intestinal flora, trigger an aberrant autoimmune response in a genetically susceptible host. Variables associated with IBD include smoking, oral contraceptives, nonsteroidal anti-inflammatory drugs, geographic and social status, enteric flora, diet, and family history.

The incidence of ocular manifestations in IBD varies greatly, with several studies reporting 3.5% to 12%2,3; however, a recent study found that 43% of 60 patients with IBD developed ophthalmologic manifestations, including episcleritis, scleritis, uveitis, and less frequently, choroiditis, vasculitis, optic neuritis, pigment epithelial detachment, and retinal detachment.4 Acute hypopyon uveitis is rare, occurring in approximately 0.85% of cases.5 To our knowledge, no case of acute hypopyon uveitis after LASIK in the setting of ulcerative colitis has been reported.

CASE REPORT

A 24-year-old man presented to his ophthalmologist with pain, redness, photophobia, and decreased vision in the left eye that began 15 days after uneventful bilateral LASIK for moderate myopic astigmatism. After initial treatment with topical moxifloxacin 0.3% and prednisolone acetate 1% for 2 weeks without significant improvement, he was referred for evaluation. Ophthalmic history included two short episodes of contact lens–associated keratitis. Medical history included depression, treated with trazodone, and previously undisclosed ulcerative colitis, treated for 5 years with azathioprine and discontinued 9 months prior to presentation without recurrence.

On examination, uncorrected distance visual acuity (UDVA) was 20/20 in the right eye and 20/60 in the left eye, that pinholed to 20/40. Intraocular pressures were 12 and 8 mmHg in the right and left eye, respectively. Slit-lamp examination of the right eye was unremarkable except for a well-positioned LASIK flap. In the left eye, 2+ conjunctival injection was noted with ciliary flush, a well-positioned LASIK flap with mild diffuse haze and four small peripheral anterior stromal scars adjacent to the flap edge consistent with previous contact lens–related keratitis. No signs of acute corneal changes were detected. In particular, there was no active corneal inflammation or infiltrate and no obvious interface fluid on slit-lamp examination or anterior segment optical coherence tomography (OCT). The anterior chamber showed 3+ cellular reaction with a 0.5 mm hypopyon (Fig 1) and a fibrinous membrane over the anterior capsule (Fig 2). Dilated fundus examination was normal with no evidence of vitreous cells.

The patient was diagnosed with acute nongranulomatous uveitis in the left eye and treated with topical difluprednate 0.05% every 30 minutes while awake, oral prednisone 20 mg daily, and topical homatropine 2% twice daily. The hypopyon resolved after 1 day and UDVA improved to 20/25 in the left eye after 6 days, with a final UDVA of 20/20 after 4 weeks. Oral and topical steroids were tapered without complications. Additional work-up was negative for rapid plasma reagin, fluorescent treponemal antibody absorption, and chest X-ray, but positive for human leukocyte antigen (HLA) B27. Anterior segment OCT showed increased stromal and LASIK flap thickness in the left eye at initial presentation with flap thickness improving from 150 μm to 120 μm after resolution of the uveitis (Fig 3).
DISCUSSION

Uveitis occurs in up to 17% of patients with IBD. Sixty percent of cases are low-grade acute anterior nongranulomatous uveitis and often present in HLA-B27 positive patients. Nonophthalmic manifestations include sacroiliitis, ankylosing spondylitis, arthritis, erythema nodosum, and oral ulcers.

In a large case series, the incidence of anterior uveitis after LASIK was 0.18%, and 16.67% of those patients were HLA-B27 positive. Although the majority of postoperative LASIK anterior uveitis reported has been mild to moderate, Parmar et al described a similar case of severe fibrinous anterior uveitis after LASIK, but the etiology remained unknown and the patient was HLA-B27 negative.

Some studies have reported that the development of anterior uveitis after LASIK is independent of the spherical equivalent, duration of ablation or the number of laser pulses; however, Pisella et al found that anterior chamber flare increased after LASIK and was correlated with depth of ablation. Current hypotheses of postoperative LASIK anterior uveitis include alteration of the blood-aqueous barrier and uveal trauma secondary to the suction ring or shock wave transmission.

Postoperative LASIK anterior uveitis may also compromise endothelial function and lead to flap edema. Resolution of uveitis is associated with flap deturgescence and can be monitored with anterior segment OCT, as in our current study.

After the United States Food and Drug Administration listed autoimmune diseases such as IBD as a contraindication to LASIK, a number of retrospective studies sought to determine the risk of complications in patients with controlled autoimmune disease who had undergone laser refractive surgery. One large retrospective study found refractive results with no significant complications in a subgroup of 67 eyes of patients with IBD who underwent LASIK. In another study, the incidence rate of uveitis was similar in HLA-B27 positive patients who received LASIK versus those who did not, and a previous episode of uveitis did not increase the risk of uveitis after LASIK.

Moreover, reports of postoperative LASIK complications in IBD or HLA-B27 positive patients are few. In 2010, Carp et al described a 50-year-old woman with an undisclosed history of ulcerative colitis who developed necrotizing keratitis 2 days after LASIK. Díaz-Valle et al reported a 36-year-old man with a history of ankylosing spondylitis who developed recurrent anterior nongranulomatous uveitis, corneal thinning, and late-onset diffuse lamellar keratitis 3 years after LASIK. Both cases resolved after aggressive steroid treatment with good visual outcomes.

Performing laser refractive surgery in patients with IBD or positive HLA-B27 remains controversial, although a number of retrospective studies have found that there is no increase in the incidence of postoperative LASIK complications in these patients. Our case is one of the few presenting a potentially visually significant inflammatory reaction after LASIK in a patient with ulcerative colitis; however, the exact relationship between these events is impossible to ascertain. Nevertheless, early recog-
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Mention and treatment can result in an excellent outcome. We recommend direct questioning regarding history of IBD and other autoimmune disorders in all candidates for photorefractive surgery and a thorough informed consent for these patients.

AUTHOR CONTRIBUTIONS


REFERENCES