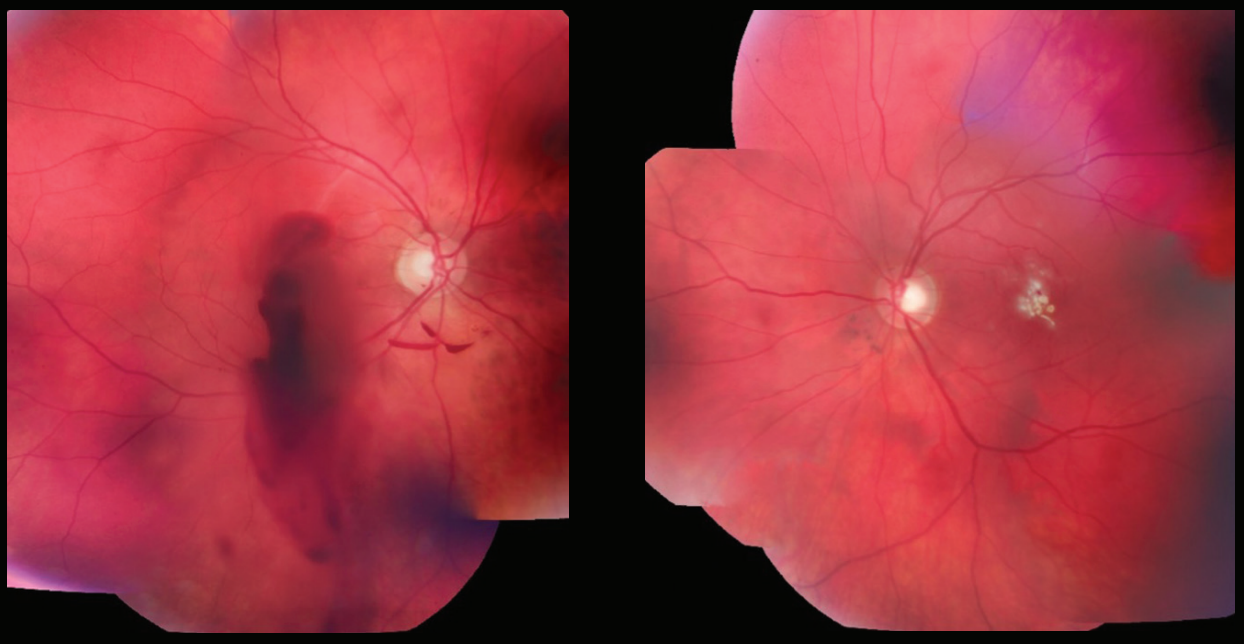


FIGURE 1

SELF-INFLICTED LASER-INDUCED RETINOPATHY

Education on the safe use of potentially hazardous devices is lacking, as this case demonstrates.

BY NINEL Z. GREGORI, MD; LOUIS CAI, MD; AND YASMAN MOSHIRI, MD

A 40-year-old man sustained an accidental, laser-induced retinal injury that progressed to a full-thickness macular hole (FTMH) in each eye. He presented after the injury occurred while using a handheld class 3 blue laser (450 nm) that he had purchased on the internet. His VA at presentation was 20/400 OU.

IMAGING AND FOLLOW-UP

Initial fundus photography revealed vitreous and preretinal hemorrhages in his right eye and multiple, yellow-white fresh laser burns in his left macula (Figure 1). Fluorescein angiographt showed hyperfluorescent curvilinear streaks in the macula of each eye superiorly, as well as hyperfluorescent laser burns in his left eye (Figure 2). OCT showed preretinal hemorrhage in his right eye and retinal disruption with preretinal hyperreflective lesions in the left eye (Figure 3).

One month later, his VA had deteriorated to counting fingers OU. The blood cleared in his right eye, but he developed a FTMH in each eye (Figure 4). OCT showed clumping of the retinal pigment epithelium (RPE) and outer retinal atrophy in the area of curvilinear streaks in each eye.

MORE ON LASER-INDUCED INJURIES

This case reinforces the necessity of public education on the dangers of using potentially hazardous handheld lasers without eye protection. Retinal streaks point to a self-inflicted laser injury, whereas laser injuries inflicted by another person tend to result in focal foveal

FIGURE 2

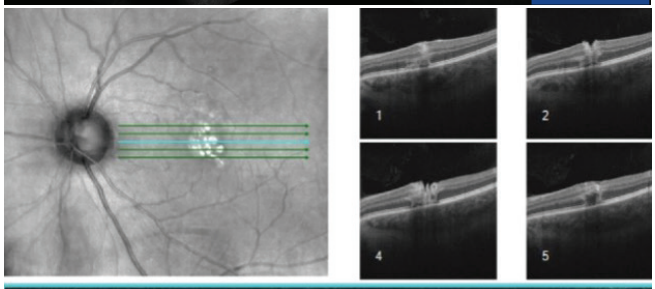
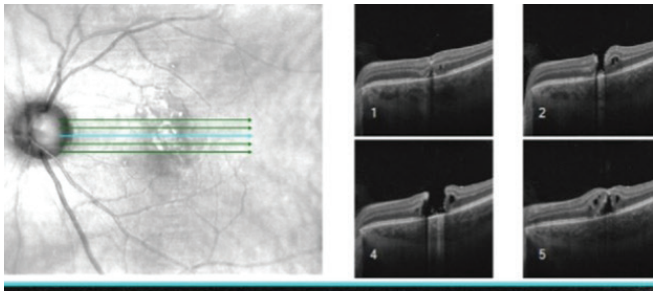


FIGURE 3



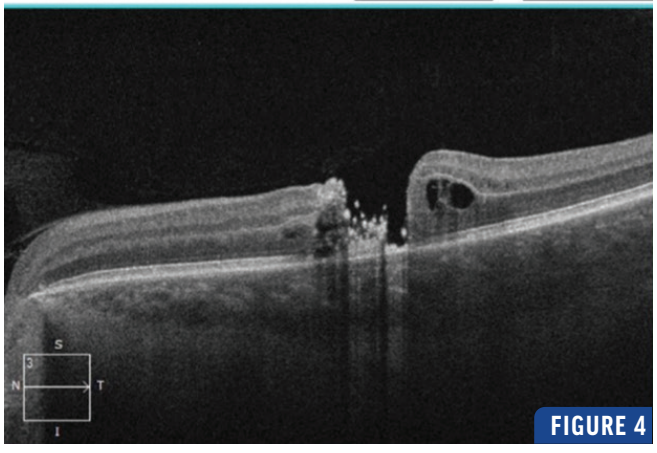


FIGURE 4

lesions.[1] Retinal damage from laser pointers may vary in morphology and can include subretinal or intraretinal hemorrhage, retinal edema, RPE scarring, foveal granularity, vitreous or chorioretinal hemorrhage, perifoveal drusenoid-like deposits/pigment clumps, ring-shaped hypopigmented lesions in the fovea, macular holes, and, rarely, choroidal neovascularization.[2]

The FDA has identified four major classes of lasers (1-4), with laser pointers being class 3R.[3] Ocular injury can occur within seconds of exposure to a class 3 laser, despite blinking or looking away. Labeling on these devices may also be inaccurate. The Laser Institute of America also cautions against viewing the reflection of a laser beam from a mirror-like surface, as this can injure the eye similar to a direct beam.[3,4]

While laser-induced macular holes may spontaneously close, surgical intervention may be necessary for persistent cases and can improve visual acuity.[4] Spectral-domain OCT is a sensitive tool clinicians can use to evaluate retinal damage and changes.[5] ■

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If you have images you would like to share, email Manish Nagpal, MS, FRCS, FASRS, at drmanishnagpal@yahoo.com.

Note: Photos should be 400 dpi or higher and at least 10 inches wide.