

reous hemorrhage or traction foveal detachment. There were no statistically significant differences between both groups in the frequency of intraoperative hemostasis (high infusion pressure or diathermy) (1.25-mg group, 13%; 0.25-mg group, 7%) and the incidence of postoperative vitreous hemorrhage (1.25-mg group, 13%; 0.25-mg group, 14%). No local complications or systemic adverse effects were observed in all eyes.

The mean (SD) free VEGF concentration in the aqueous humor before IV injection of bevacizumab was 349.0 (255.8) pg/mL in the 0.25-mg dose group and 359.5 (231.7) pg/mL in the 1.25-mg dose group. There were no significant differences between the groups. The VEGF levels in the aqueous humor 2 to 5 days after IV injection of bevacizumab were less than the limit of detection (31.0 pg/mL) in all eyes of both groups. Fluorescein angiography was performed before and 24 hours after the 0.25-mg IV injection of bevacizumab in 3 cases. Twenty-four hours after IV injection of bevacizumab, fluorescein angiography showed dramatic regression of retinal neovascularization with marked resolution of the leakage from active neovascularization seen before the injection (**Figure**).

Comment. The free VEGF concentration in the aqueous humor is different from that in the vitreous. However, the VEGF level in the aqueous humor has been reported to be significantly correlated with the VEGF level in the vitreous and is correlated with the severity of diabetic retinopathy and the activity of PDR.⁵ Both 1.25-mg and 0.25-mg IV injections of bevacizumab blocked all free VEGF in the aqueous humor. Nevertheless, 1.25 mg has been widely administered as the standard dose of IV bevacizumab. This study suggests that a lower dose (0.25 mg) of IV bevacizumab may be effective as a preoperative adjunct before vitrectomy in the treatment of PDR.

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Ultra-High-Resolution Optical Coherence Tomographic Findings in Comotio Retinae

Comotio retinae is a self-limited opacification of the retina secondary to direct blunt ocular trauma. Histologic studies of monkeys and humans relate this clinical observation to damaged photoreceptor outer segments and receptor cell bodies.¹⁻³ Reports using time-domain optical coherence tomography (OCT) and spectral-domain OCT support the involvement of the photoreceptor layer, but these techniques lack the resolution necessary to confirm results of histologic analysis.⁴⁻⁶ Prototype high-speed ultra-high-resolution OCT (hs-UHR-OCT) images demonstrate these anatomical changes in a patient with acute comotio retinae.

Report of a Case. A 46-year-old man visited the emergency department with pain and blurry vision in the right eye after blunt ocular trauma. Uncorrected visual acuities were 20/30 OD and 20/25 OS. External examination showed periorbital ecchymosis and laceration. Pupil examination results were normal with relative afferent pupillary defect. Intraocular pressures were 14 mm Hg OD and 13 mm Hg OS. Slitlamp examination revealed a subconjunctival hemorrhage in the right eye. Orbital computed tomography demonstrated fracture of the right inferior and medial orbital walls. Dilated examination of the right eye showed a central, annular area of opacification of the retina surrounding the fovea consistent with comotio retinae (**Figure 1**). Retinal imaging was performed using spectral-domain OCT (Cirrus HD-OCT, software version 3.0; Carl Zeiss Meditec, Dublin, California) and prototype hs-UHR-OCT.

Comment. The spectral-domain OCT image suggests hyperreflectivity at the level of the photoreceptors (**Figure 2A**). However, the hs-UHR-OCT image better demonstrates increased backscattering at the level of the

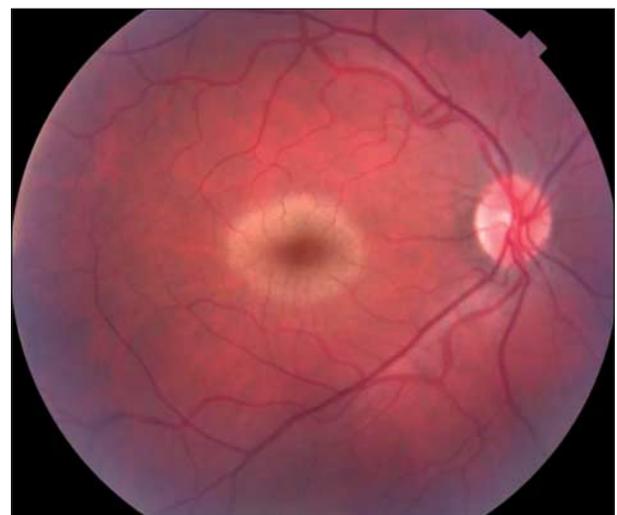


Figure 1. Color fundus photograph of the right eye showing annular opacification surrounding the macula of comotio retinae after blunt trauma. Corresponding spectral-domain and ultra-high-resolution optical coherence tomographic images are shown in Figure 2A and C.

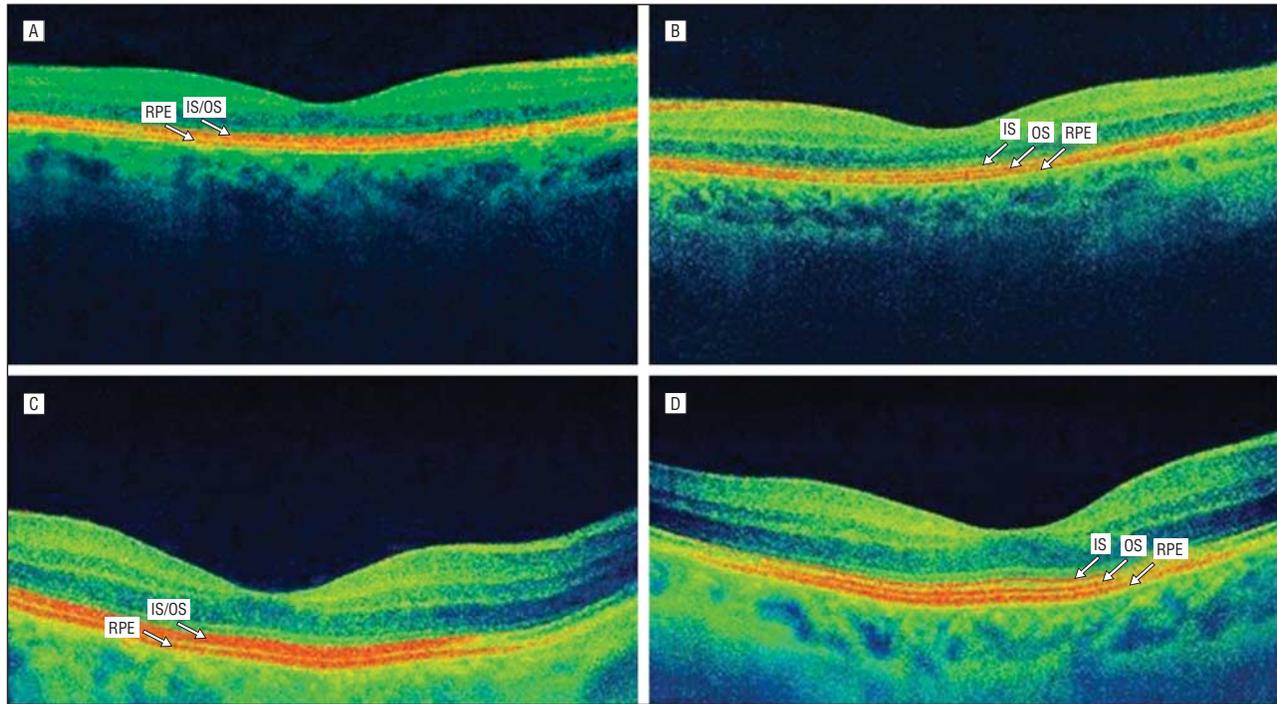


Figure 2. Optical coherence tomographic (OCT) images. IS indicates inner segment; OS, outer segment; and RPE, retinal pigment epithelium. A, A spectral-domain OCT image of the right eye showing acute commotio retinae. B, A spectral-domain OCT image of a normal internal control (the left eye). C, A high-speed ultra-high-resolution OCT image showing higher-resolution disruption between the IS and OS photoreceptor layers and the RPE. D, A high-speed ultra-high-resolution OCT image of a normal internal control (the left eye).

outer photoreceptor layer, with an obscuration of the inner segment–outer segment junction of the photoreceptor layers and hyperreflectivity of the retinal pigment epithelial layer (Figure 2C).

Improved visualization of these changes is likely owing to the greater axial resolution of the hs-UHR-OCT at 3.5 μm compared with the 5- μm axial resolution of the spectral-domain OCT as well as denser A-scan acquisition by the hs-UHR-OCT. The hs-UHR-OCT uses a broader bandwidth light source to achieve higher axial resolution. Normal internal controls of the left eye (Figure 2B and D) are included for comparison.

Retinal disruption in commotio retinae is demonstrated at the level of the outer and inner photoreceptor layers and retinal pigment epithelial layer using prototype hs-UHR-OCT. These in vivo findings are consistent with results of previous histologic studies of commotio retinae.¹⁻³

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Recurrent *Lecythophora mutabilis* Keratitis and Endophthalmitis After Deep Anterior Lamellar Keratoplasty

Lecythophora mutabilis is a mold that has been rarely reported as the cause of ocular infection: 1 case of endophthalmitis¹ and 1 case of blebitis.² We report a case of