

**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  $\mu\text{m}$  compared with the 5- $\mu\text{m}$  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.<sup>1-3</sup>

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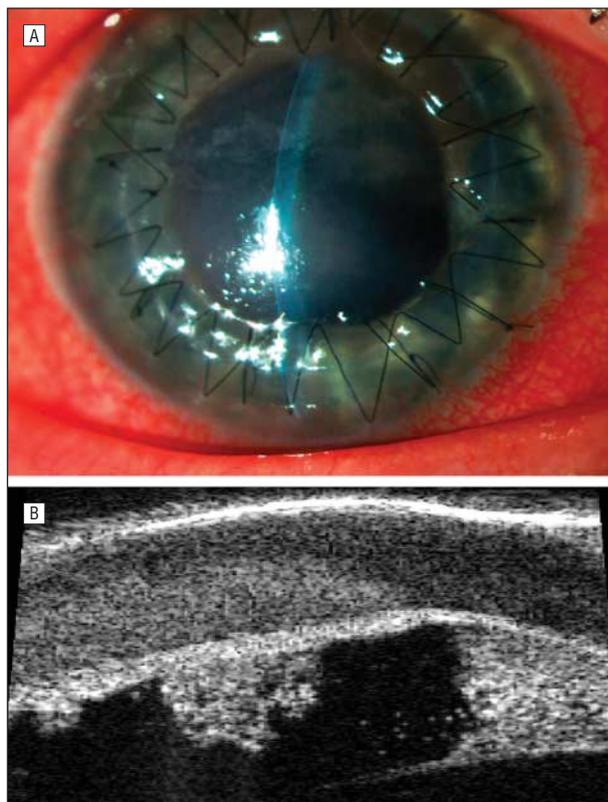
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### Recurrent *Lecythophora mutabilis* Keratitis and Endophthalmitis After Deep Anterior Lamellar Keratoplasty

*Lecythophora mutabilis* is a mold that has been rarely reported as the cause of ocular infection: 1 case of endophthalmitis<sup>1</sup> and 1 case of blebitis.<sup>2</sup> We report a case of

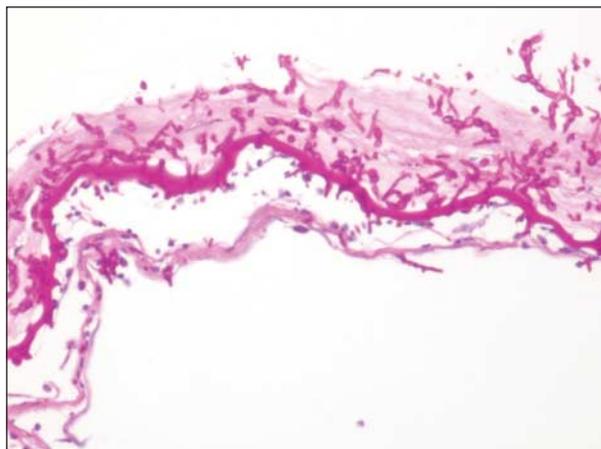


**Figure 1.** On the patient's first visit to us, slitlamp examination demonstrated deep infiltrates in the residual host stromal bed (following deep anterior lamellar keratoplasty) (A) and ultrasound biomicroscopy demonstrated findings consistent with a fungal mass extending from the cornea to the iris (B).

*L. mutabilis* keratitis with intraocular invasion that required aggressive treatment.

**Report of a Case.** A 53-year-old woman was treated for a contact lens-associated *Pseudomonas aeruginosa* corneal ulcer in the right eye. Fortified antibiotic eyedrops were used, but corticosteroids were not. On resolution of this infection, she developed a corneal infiltrate caused by a species of fungus that was not identifiable by a local laboratory. She began hourly treatment with voriconazole, 1%, eyedrops; because of poor clinical response, treatment with natamycin, 5%, eyedrops every 2 hours was later added. Because of the progressing infiltrate, a therapeutic deep anterior lamellar keratoplasty was performed. Postoperatively, treatment with prednisolone acetate, 1%, eyedrops every 2 hours and gatifloxacin, 0.3%, eyedrops 4 times daily was prescribed. One week postoperatively, a new infiltrate at the graft-host interface was discovered.

The patient was referred to us with visual acuity of hand motions OD. In addition to the stromal infiltrate, white clumps of presumed fungal balls were seen in the anterior chamber adherent to the cornea and iris (**Figure 1**). After an anterior chamber tap and injection of 0.1 mL of voriconazole (1 mg/mL), treatment with hourly voriconazole, 1%, eyedrops was started. Tap and injection of voriconazole were repeated daily for the next 2 days. No anterior chamber samples demonstrated microbiological growth. Because of the progressing infiltrate, a therapeutic penetrating keratoplasty was per-



**Figure 2.** Histopathologic analysis of the posterior corneal tissue left behind at the time of deep anterior lamellar keratoplasty demonstrated fungal filaments diffusely infiltrating the host stroma and penetrating through the Descemet membrane (periodic acid-Schiff, original magnification  $\times 10$ ).

formed. Intraoperatively, the presumed fungal collections were peeled from the iris and the anterior chamber was irrigated with voriconazole (1 mg/mL). On histopathologic analysis, fungal filaments were seen penetrating through the cornea into the anterior chamber (**Figure 2**).

Postoperatively, the patient was treated with voriconazole, 200 mg orally twice daily, gatifloxacin, 0.3%, eyedrops 4 times daily, and prednisolone acetate, 1%, eyedrops 4 times daily. Six days after surgery, recurrence of the fungal infection in the host at the wound edge was noted. Tap and injection with voriconazole were performed and continued daily. Amphotericin B, 0.1 mL (100  $\mu$ g/mL), was injected on the third day, and hourly amphotericin B, 0.15%, eyedrops were added owing to continued progression of the infiltrate. Five days later, the patient underwent a limbus-to-limbus penetrating keratoplasty because of worsening infection. Intraoperatively, the areas of the host cornea that clinically appeared to be infiltrated (superiorly from the 9-o'clock to 3-o'clock positions) were treated with double freeze-thaw cryotherapy before the cornea was excised, and the anterior chamber was irrigated with amphotericin B (100  $\mu$ g/mL) and voriconazole (1 mg/mL).

Daily anterior chamber tap and injection of amphotericin B were continued for 4 days. Treatment with topical amphotericin B, voriconazole eyedrops, and oral voriconazole was continued for 6 weeks. At the last follow-up visit 6 months after the last procedure, although the graft had failed, there was no evidence of active infection. Cultures from the corneal tissue from the first penetrating keratoplasty had been sent to the Fungal Testing Laboratory, San Antonio, Texas, and ultimately grew *L. mutabilis* sensitive to both amphotericin B and voriconazole by broth dilution sensitivity testing.

**Comment.** *L. mutabilis* ocular infections are extremely rare and potentially very aggressive. Fortunately, our case responded to amphotericin B in contrast to the 2 reported cases in the literature.<sup>1,2</sup> Although deep anterior lamellar keratoplasty has been reported by some investigators to be an alternative to penetrating keratoplasty in the setting of active corneal infections,<sup>3</sup> in this instance

a full-thickness graft may have been a better choice given that the infection recurred in the host bed and that fungus was found penetrating into the anterior chamber.

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#### Announcement

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