Corneoscleral patch graft combined with vitrectomy and intravitreal antibiotics for the management of *Morganella morganii* endophthalmitis

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We report a case of acute fulminant *Morganella morganii* endophthalmitis secondary to wound-site infection reported on the sixth postoperative day after complicated cataract surgery in an elderly diabetic man. The case demonstrates effective management of this rare entity with a corneoscleral patch graft, vitrectomy, and intravitreal antibiotics.

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Endophthalmitis is a devastating eye complication that can follow intraocular surgery. Endophthalmitis caused by *Morganella morganii* is rare and usually associated with poor visual outcomes. We describe successful management of a case of *M. morganii* endophthalmitis following small-incision cataract surgery (SICS) treated promptly with a corneoscleral patch graft, vitrectomy, and intravitreal antibiotics.

CASE REPORT

An 83-year-old diabetic man with a mature cataract had manual SICS complicated by a posterior capsule tear with vitreous prolapse that was managed with triamcinolone acetonide-assisted anterior vitrectomy. A rigid poly(methyl methacrylate) intraocular lens (IOL) (Spectra Vision) was placed in the sulcus, and the scleral wound was sutured with 10-0 nylon to achieve a watertight closure at the end of surgery. On the first postoperative day, the uncorrected distance visual acuity (UDVA) was 20/40, there was mild corneal edema with C1 cells, the IOL was well centered, and the retinal glow was healthy.

On the sixth postoperative day, the patient presented with sudden onset of painful loss of vision in the operated eye that had occurred 48 hours earlier. On examination, the UDVA was light perception; lid edema, circumcorneal congestion, a corneal abscess at the wound site, and grade 4+ flare and cells with a 4.0 mm hypopyon were present. The fundus was not visible; ultrasound demonstrated significant vitreous haze. Clinical diagnosis of a wound-site corneal abscess with acute bacterial endophthalmitis was made based on the site of heavier inflammation (Figure 1).

After written informed consent and under aseptic precautions, a full-thickness therapeutic corneoscleral patch graft was created after deroofing of the scleral tunnel. An infiltrate was noted in the inner lip of the wound. A 7.0 mm trephine was used to excise the entire area of corneal abscess with adjoining necrotic sclera including the clear margin on all sides, which was cut with a corneal scissors. A 7.5 mm diameter trephine was used to punch the donor tissue, and the graft was then sutured. A 25-gauge core vitrectomy was performed, and an intravitreal injection of vancomycin 1.0 mg/0.1 mL and ceftazidime 2.25 mg/0.1 mL was given.

Topical fortified vancomycin 5.0% and fortified ceftazidime 5.0% eyedrops were prescribed hourly, along with prednisolone acetate 1.0% eyedrops every 2 hours and tropicamide 0.5% eyedrops twice a day.

The culture obtained from corneoscleral tissue was positive for *M. morganii*. The potassium hydroxide mount was negative. The organism was sensitive (by Kirby–Bauer disc diffusion method) to ceftazidime, tobramycin, and amikacin. Based on the culture-sensitivity report, fortified vancomycin was stopped. The vitreous sample was negative, as were the blood culture and urine culture reports.

After 2 days, the pain and intraocular inflammation improved and the corneal haze decreased. The hypopyon was reduced, but the vitreous haze persisted. A second intravitreal injection of ceftazidime (2.25 mg/0.1 mL) was given.
Topical antibiotic and steroid drops were gradually tapered. On subsequent follow-up examinations, the anterior and vitreous chambers were quiet, the corneal graft was clear, and the sutures were intact. The corneal haze was reduced. The hypopyon reduced drastically (Figure 2). At the 6-month follow-up, the patch graft was opacified but the pupillary area and the rest of the cornea were relatively clear (Figure 3). The eye was quiet, and UDVA was counting fingers at 2 m. B-scan ultrasonography was normal, and no vitreous haze was detected (Figure 4).

**DISCUSSION**

In tunnel infections, an organism can be inoculated in the potential space between the floor and roof of the tunnel and may gain early access to the anterior chamber and vitreous cavity, giving rise to endophthalmitis. Most organisms implicated in postoperative endophthalmitis exist as normal ocular flora. *Morganella morgani* is a gram-negative bacillus that inhabits the gastrointestinal tract and is part of the normal fecal flora and a rare isolate from the normal ocular flora. It is an opportunistic pathogen usually encountered in postoperative and nosocomial settings, causing urinary tract and wound infections. Systemic antibiotics can be considered in endophthalmitis with these coexisting conditions.
Morganella morganii is a rare cause of postoperative endophthalmitis with generally devastating visual outcomes. Garino et al. reported a successful outcome in a patient who developed suture-related endophthalmitis, which could be attributed to various factors such as uneventful surgery, UDVA of 20/30 at presentation, and lack of systemic contributory factors such as diabetes and prompt treatment.

Our case highlights the importance of prompt and aggressive management with a therapeutic corneal patch graft combined with vitrectomy and intravitreal antibiotics to prevent late presentation (48 hours after the onset of symptoms) of a rare virulent organism (M morganii) in elderly diabetic patients after complicated cataract surgery.

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