LETTER

Employing endoscopic guidance for placement of a black diaphragm aniridia intraocular lens following destructive Acanthamoeba sclerokeratitis

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Anterior segment reconstruction can be particularly challenging when anatomic landmarks are lost. We describe a case of destructive Acanthamoeba sclerokeratitis resulting in aniridia, aphakia, loss of limbal architecture, and corneal opacification that was approached surgically with penetrating keratoplasty and placement of a black diaphragm aniridia intraocular lens under endoscopic guidance.

Case report

Our patient, a 48 year old female contact lens wearer, was diagnosed with Acanthamoeba keratitis in June 2000. Before our evaluation, she had been treated with tobramycin and dexamethasone ointment, topical trifluridine, oral acyclovir, oral prednisone, and topical prednisolone acetate 1%. We diagnosed Acanthamoeba keratitis and began aggressive treatment with polyhexamethyl biguanide, chlorhexidine, and oral clotrimazole. By January 2001, she was culture negative, but had developed necrotising sclerokeratitis with limbal involvement, dense corneal opacification, and descemetocoele formation. Urgent penetrating limbal keratoplasty was performed. Upon placement of the lid speculum, spontaneous perforation of the cornea occurred with prolapse of the lens and necrotic iris. We

performed a 12.5 mm diameter keratolimbal resection, removed residual lens and necrotic iris, and performed anterior vitrectomy. A 13.0 mm keratolimbal graft was placed and covered with an amniotic membrane graft. (fig 1)

Eighteen months later, the patient had negative cultures, a quiet eye, an opaque corneal graft, controlled intraocular pressure, and counting fingers vision with projection to all four quadrants. However, the patient complained of severe glare and light sensitivity. Soft contact lens wear was unsuccessful because of irregular postsurgical topography. After extensive discussion, this highly motivated patient elected to pursue further anterior segment reconstructive surgery to address the aniridia, aphakia in the absence of capsular support, and corneal opacity.

Penetrating keratoplasty and implantation of a sulcus fixated Morcher 67F black diaphragm polymethylmethacrylate lens was planned. External landmarks for transscleral suture fixation had been lost due to infectious necrosis and the large keratolimbal graft. Instead, suture placement was guided by an ocular endoscope (URAM E2 MicroProbe Laser System, EndoOptiks, New Jersey, USA). Following excision of an 8.0 mm diameter corneal button, a 10–0 prolene suture on an STC-6 needle (Ethicon Inc, New Jersey, USA) was passed externally under a scleral flap and viewed internally via the endoscope as it entered the ciliary sulcus. The suture was passed through the lens fixation loop. A 25 gauge needle was passed externally into the ciliary sulcus under endoscopic visualisation, the STC-6 needle was passed into its bore, and the complex guided out of the eye. This process was repeated for the opposing haptic, the sutures were tied, and an 8.0 mm donor button was placed. In the early postoperative period, the intraocular lens was positioned without obvious decentration or tilt, and the patient reported substantial improvement in her glare symptoms.
Comment

A black diaphragm intraocular lens design allows simultaneous treatment of aniridia and aphakia. The Morcher 67F has a 13.5 mm length, 10 mm diameter optic, and a 5 mm central clear zone. Precise haptic capture in the ciliary sulcus is necessary to minimise risks of haptic-optic crowding, mechanical irritation, and tilt or decentration of a small optic zone. Unfortunately, lens decentration and tilt is commonly observed following transscleral fixation of lenses. This can be attributed to suboptimal haptic position following blind passage of fixation sutures. Althaus and Sundmacher have described the usefulness of direct endoscopic visualisation in eyes undergoing transscleral suture lens fixation. In our patient, accurate lens position was critical, and the risk of lens malposition high, given her unfavourable anatomy. Our experience confirms that endoscopic visualisation is valuable for the placement of transscleral lens fixation sutures, particularly when surgical landmarks are lost and when mild lens malposition might adversely affect the surgical outcome.

References