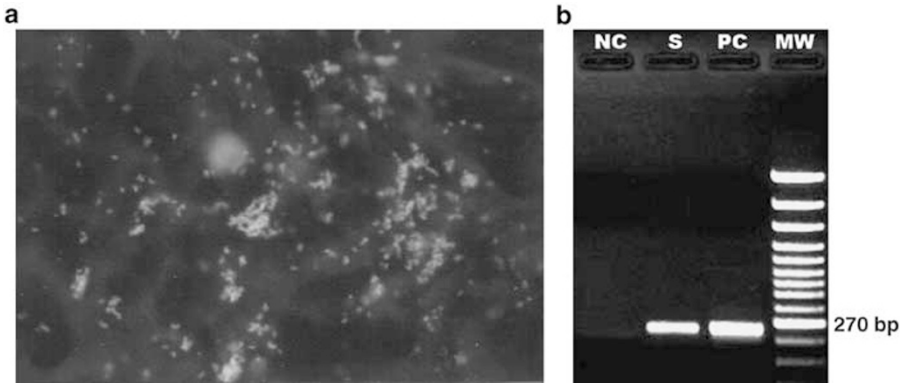

Figure 2 (a) KOH/Calcofluor white stain of the corneal scraping showing oval fluorescing microsporidial spores (× 500). (b) 1.5% Agarose gel electrophorogram showing the 270 base pair PCR product.

microsporidia spores, which were confirmed by 1% acid-fast stain. Polymerase chain reaction (PCR) for microsporidia was performed using primers capable of identifying several Enterocytozoon and Encephalitozoon species of microsporidia.[3] A single ~270 base pair fragment was observed on agarose gel electrophoresis and ethidium bromide staining of the PCR amplified patient sample (Figure 2b). Topical steroids were discontinued and he was treated with topical 0.3% ciprofloxacin eight times daily along with topical lubricants. After 10 days, all his lesions had disappeared (Figure 1b). The patient was seronegative for HIV by ELISA test.

Bilateral punctate epithelial keratopathy and conjunctivitis has been described in immunocompromised[1,2] and more recently in immunocompetent patients as well.[4,5] Previously described risk factors like trauma, contact lens wear, prior refractive surgery or exposure to contaminated water were absent in our patient. The only possible associated risk in this case was the use of topical steroids, leading to a localized immunosuppressed state, resulting in secondary infection by microsporidia. In our patient, diagnostic debridement probably debulked the epithelium of the load of organisms and hastened resolution. Contrary to belief that debridement worsens the infection by driving the organisms into the stroma; we found that debridement actually hastens resolution.[2]

Comment

To the best of our knowledge, this is the first report of keratoconjunctivitis caused by microsporidia in a corneal graft. As a result of local immunosuppression, this infection can occur in patients who have been grafted, which has not previously been described. The differential diagnosis of microsporidial keratitis should be considered in this subset of patients presenting with typical features of multiple epithelial lesions in the cornea.

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Sir,

Scleral perforation following diode laser trans-scleral cyclophotocoagulation

Diode laser trans-scleral cyclophotocoagulation (DLTSC) is an effective treatment in refractory glaucomas.[1–3] Complications, such as uveitis, pupillary distortion, conjunctival burns, hyphema, chronic hypotony, cystoid macular oedema, retinal detachment, and phthisis bulbi, have been reported.[1,4–8] Two cases of scleral perforation requiring suturing were described in the published literature.[9,10] We describe a case of scleral perforation during DLTSC in a patient with pre-existing scleral thinning, confirmed with ultrasound biomicroscopy. The leakage stopped after 1 day of patching without the need of suturing.

Case report

A 66-year-old Chinese woman had undergone limbal incision ECCE to both eyes 20 years ago with no intraocular lens implantation. Thereafter, she had been abusing unprescribed topical ophthalmic steroid for more than 20 years, unaware of its potential side effects. She had no other ophthalmic or medical history of note. On April 2004, she suffered a blunt trauma to her left eye while she bumped into a glass door with a resultant 3.5-mm full thickness dehiscence of the limbal cataract wound in the supero-temporal quadrant, with vitreous prolapse. There were peripheral corneal and scleral thinning from 10 to 2 o' clock positions, presumably related to her chronic steroid abuse.

Emergency repair of the corneal wound and anterior vitrectomy were carried out, followed by a repeat pars-plana vitrectomy and anterior vitrectomy 2 weeks later for persistent vitreous incarceration in the corneal wound.

Nevertheless, she suffered from subsequent secondary synechial angle closure glaucoma. Despite maximal antiglaucomatous medications, including four topical medications and oral acetazolamide 500 mg four times a day, her intraocular pressure eventually reached 48 mmHg. Gonioscopy examination revealed severe peripheral anterior synechiae $>270^{\circ}$ and a cup-to-disc ratio of 0.8. Visual acuity was 4/60 in the left eye at this stage.

DLTSC was performed under retrobulbar anaesthesia using a G-probe (IRIS Medical Instruments, Inc., Mountain View, CA, USA). A total of 14 laser spots each of 1500 mW, 2-s duration, were applied. A popping sound was heard at six points.

While applying the 14th laser application over the thinned sclera at 10 o' clock position, a gush of aqueous was noticed. Inspection under the operating microscope confirmed a round, 'punched out' full thickness perforation, 1.2 mm behind the limbus with leakage demonstrated with Siedel test (Figure 1). There were no vessels or pigment around the perforation site. There were no other conjunctival or scleral burns. The G probe was inspected and no black deposits at the tip were observed. The laser procedure was aborted. The eye was padded with antibiotic ointment and crepe bandage. Oral acetazolamide 500 mg was given four times daily to reduce aqueous flow through the perforation.

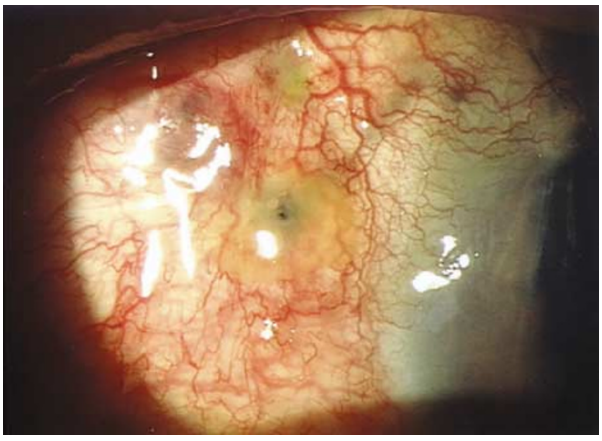

Figure 1 A round, 'punched out' full thickness scleral perforation with leakage demonstrated with Siedel test.

On the next day, the leakage had stopped, possibly having been plugged by vitreous. The intraocular pressure was 9 mmHg. Topical prednisolone acetate 1% four times daily, topical chloramphenicol 0.5% four times daily, and topical atropine 1% twice daily were prescribed. During the subsequent 3 weeks, the scleral hole healed. Ultrasound biomicroscopy revealed a scleral thickness of 0.437 mm around the perforation site. In the ensuring 3 months, the intraocular pressure gradually increased to 40 mmHg despite antiglaucomatous agents. At the time of writing, the patient was pain-free, and she refused further intervention. Visual acuity was hand movement in the left eye at most recent follow-up. The right eye was aphakic with a best-corrected visual acuity of 1.0. The remote risk of sympathetic ophthalmitis and its symptoms were discussed, and the patient preferred observation at this stage.

Comment

Diode laser of 810 nm wavelength is an effective tool for treating refractory glaucomas.[1–3]

To the best of our knowledge, there were two reported cases of scleral perforation due to DLTSC in the published literature.[10,11] The case reported by Gaasterland and Pollack[9] was thought to be due to the

sharp edge of the probe cutting conjunctival vessels and causing bleeding. Thin adherent debris was then carbonized, allowing the laser tip temperature to rise and causing scleral perforation. The defect required suturing. This led to the redesigning of the laser probe tip. In our case, there was no such carbonized debris seen and we think it is unlikely to be the reason for our perforation.

Sabri and Vernon[10] reported a case of scleral perforation using the new contact G-probe. The defect required suturing with two 10-0 vicryl sutures. However, 1 week later, the scleral leak recurred and further suturing was needed.

In our case, with crepe bandage and oral acetazolamide for 1 day, we were able to stop the leakage. During subsequent follow-up, the scleral hole healed and was covered by intact conjunctival epithelium. This demonstrated that suturing may not always be necessary, especially when the perforation is small.

Pre-existing scleral thinning is a common risk factor in the two previously reported cases, and also in our patient. Hence, Sabri and Vernon[10] suggested the use of a lower laser power setting (50%), though there is no good proof that such a lower power could prevent perforation and is still as effective.

With heightened awareness of this complication, and appropriate management when it occurs, we believe the risk of scleral perforation and its consequences could be minimized.

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Sir,

Vitreous haemorrhage following cardiopulmonary resuscitation

Vitreous haemorrhage is known to occur by a wide variety of mechanisms. We present the case of a 27-year-old gentleman who developed a vitreous haemorrhage following cardiopulmonary resuscitation (CPR). We postulate that this occurred as a result of the chest compressions performed, through a mechanism similar to valsalva retinopathy. To our knowledge this is the first reported case of vitreous haemorrhage arising in this way.