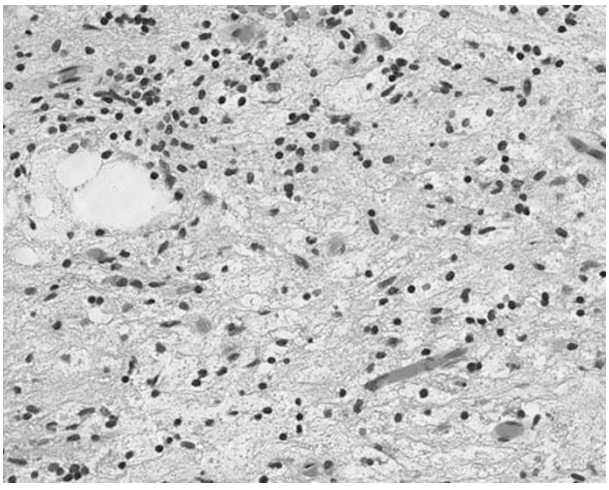

**Figure 4** Photomicrography. Higher magnification of the same area showed in Figure 3. The xanthomized histiocytes appear pale with small nuclei and vacuolated cytoplasm (H&E, original magnification, $\times 400$).

lacrimal sac as a manifestation of WG has never been described before.

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Sir,

**Management of paecilomyces keratitis**

Paecilomyces is a rare cause of fungal keratitis, presenting a significant challenge for diagnosis and successful treatment.

### *Case report*

A 44-year-old immunocompetent female school teacher was referred by another ophthalmologist for the management of left keratitis. She first presented 4 months previously, with symptoms of irritation, photophobia, and reduced vision. Treatment with topical steroids and pupil dilation was unsuccessful. No history of known trauma, contact-lens wearing, or herpes simplex keratitis was evident.

On examination, visual acuity in her right eye was 6/5 and in her left eye 6/240, pinholing to 6/120. The left cornea (Figure 1) demonstrated a $2 \times 2$ mm central corneal posterior plaque with a clear anterior stroma and no epithelial defect. There was an associated 1 mm hypopyon. The B scan of her vitreous showed no vitreous cells. Owing to the posterior position of the infiltrate, no anterior scraping was performed. A clinical decision was made to undertake an excisional biopsy to remove the infected tissue. The patient was commenced on oral itraconazole 100 mg b.d. as well as topical dexamethasone 0.1% q.i.d. in preparation to minimize inflammation before surgery. A left penetrating keratoplasty was performed with a 9 mm trephination of the host centred around the infiltrate with insertion of a 10 mm diameter corneal graft. Histopathology reported septate hyphae extension through Descemet's

membrane and into the anterior chamber (Figure 2). These findings as well as the culture identified the infecting organism as *Paecilomyces marquandii*. Sensitivities demonstrated resistance to all anti-fungals, except voriconazole. Hence, the patient was changed to oral voriconazole 200 mg twice a day. Topical voriconazole 1% was formulated from the intravenous (i.v.) preparation and used hourly, tapering according to clinical response. Topical dexamethasone 0.1% q.i.d. was continued. The eye initially settled well; however, by 5 weeks there was evidence of fungal recurrence at the superior margin of the corneal graft as well as a hypopyon. A large corneoscleral graft of 12 mm was performed. The sclera was excised 3 mm posterior to the superior 180° of the limbus; however, the inferior 180° angle of the eye including the trabecular meshwork structures were conserved as much as possible. An attempt was also made to spare the limbal stem cells from the inferior 180° of limbus. A corneoscleral button was sutured with interrupted 9/0 nylon. Postoperatively the patient was prescribed topical prednisolone acetate 1% six times a day, topical voriconazole 1% six times a day, oral voriconazole 400 mg twice a day, and regular lubricants. Her topical and oral voriconazole were continued for a total of 7 months. She was followed up closely over the next 16 months, with no evidence of recurrence. Her best-corrected visual acuity was 6/6 with the ocular surface remaining stable (Figure 3) and a pressure of 10 mmHg was maintained. Extensive testing of potential sources of infection revealed the presence of the *P. marquandii* in the home tank water used for washing and bathing. No *Paecilomyces* species were found in the town water supply nor from the water obtained from her roof guttering.

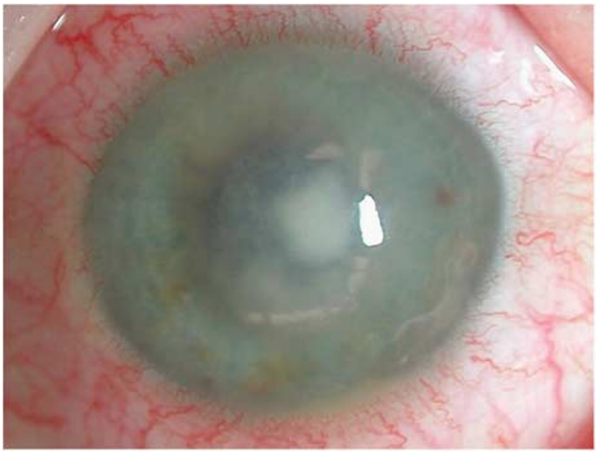

**Figure 1** Left cornea demonstrating central posterior plaque (2x2 mm) and surrounding endothelial inflammatory reaction.

## Comment

Paecilomyces keratitis characteristically presents as a posterior plaque-like infiltrate with an intact epithelium and clear anterior stroma.[1] Anterior chamber paracentesis and sampling of the plaque material is possible; however, there is a risk of potential seeding the fungus intraocularly resulting in endophthalmitis. In many cases, there is no history of trauma; however, it is proposed that it either penetrates intact epithelium or through small breaks in the epithelium and preferentially prefers the warmer internal corneal surface. Hirst *et al*[1] suggest that it may even result from endogenous seeding, but blood cultures have so far failed to identify systemic infection.

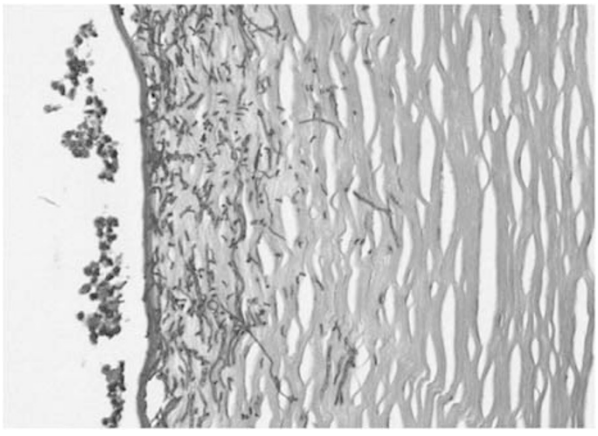

**Figure 2** Light microscopy showing septate hyphae and spores in the posterior corneal stroma with adjacent inflammatory cells within the anterior chamber (PAS stain, original magnification ×200).

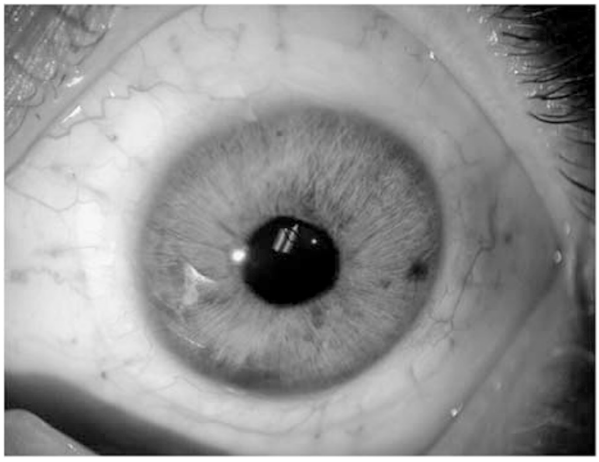

**Figure 3** Follow-up at 16 months with no evidence of recurrence of Paecilomyces keratitis and a healthy ocular surface.

This report is the first to identify a potential source of the infection from the home tank water.

The treatment is challenging as the *Paecilomyces* species is resistant to the normally available anti-fungal treatments, such as natamycin and amphotericin-B. Voriconazole is a fungistatic triazole that acts by impairing synthesis of fungal cell membranes, leading to cellular lysis.[2] It is available in both oral and i.v. forms. It is not specifically available as a topical preparation for the eye; however, this can be readily made from the i.v. form into a 1% solution and is well tolerated by the ocular surface. Both renal and hepatic functions need to be monitored at baseline and during treatment.

Corneoscleral grafting is a technique that is used for end-stage disease. Fortunately, fungal clearance was obtained; however, there was the potential that if fungal seeding had occurred intraocularly, then endophthalmitis and loss of the eye would have occurred. An attempt was made at surgery to preserve as much limbal tissue as possible in order to minimize the risk of ocular surface failure. This was a compromise as there was a risk of leaving residual fungal elements. Intractable glaucoma is also a potential consequence of corneoscleral grafting, owing to the extensive damage to the trabecular meshwork. Fortunately, in this patient's case, the inferior 180° of her trabecular meshwork showed no involvement by the fungus. Lifelong follow-up will be necessary to monitor for any of these potential complications.

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We thank Drs Lawrence Hirst and Michael Whitby for their clinical advice during the care of this patient.

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Sir,

**The influence of posterior capsule opacification on scanning laser polarimetry**

We read with interest the article by Vetrugno *et al*.[1] The authors conducted an investigation regarding the effect that posterior capsule opacification (PCO) and subsequent Nd : YAG capsulotomy have on the results of scanning laser polarimetry (SLP) of retinal nerve fibre layer (RNFL) retardation measurements. Considering that pseudophakia in glaucoma is a relatively common condition, and that SLP has been shown to be a useful tool in the diagnosis and follow-up of glaucoma, the issue studied is clinically important.

Vetrugno *et al*[1] found no change in GDx parameters before and after PCO removal (only Symmetry, Inferior Ratio, Superior Nasal, and Tempora-Superior-Nasal-Inferior-Temporal SD showed any modification).

Recently, a preliminary small case series (including GDx maps and PCO photographs) was published, as there was a subsequent larger study with consecutive PCO-affected patients on the same subject.[2,3] In contrast, we concluded that PCO removal is associated to remarkably significant changes in SLP measurements. Briefly, our results suggest that SLP examination with GDx VCC may overestimate RNFL retardation measurements in PCO-affected eyes.

The methods used by Vetrugno *et al*[1] and our group were similar. Nevertheless, some questions are raised that may help to understand the surprising differences in the results, at least in part.

As it is known, anterior segment birefringence (ASB) has to be compensated to ensure accurate RNFL assessment. In the referred paper, SLP was performed on each patient using GDx ACCESS, but there was no mention of whether variable corneal compensation GDx