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CORRESPONDENCE

Sir,

Contact lens-related *Fusarium* keratitis in London and Ghent

An outbreak of *Fusarium* keratitis has recently resulted in the withdrawal of Bausch & Lomb ReNu MoistureLoc®.[1] To our knowledge, no cases of *Fusarium* keratitis related to contact lens solutions have been reported in Europe. We have treated four cases of *Fusarium solani* keratitis in soft contact lens wearers, three of whom used ReNu MoistureLoc®, and one used AMO Complete Moisture Plus®.

Figures 1 and 2 describe the clinical details. These cases demonstrate a spectrum of outcomes, ranging from the need for a therapeutic corneal graft (case 1), to a good outcome with a visually insignificant corneal scar (case 4). Two factors contributing to a poor prognosis were delayed the diagnosis and the use of topical steroids.

Until 2004, fungal keratitis was a rare cause of microbial keratitis among contact lens wearers, even in tropical Florida and South East Asia. A report from London (which includes two of the cases described here) where filamentary fungal keratitis is uncommon, found only nine cases of fungal keratitis in contact lens wearers over 13 years.[2] For reasons that are unclear, ReNu-related *Fusarium* keratitis has not been reported in Europe. Cases may have been diagnosed, but not reported. The temperate climate has also probably played a role.

Although there has been a dramatic decrease in contact lens-related *Fusarium* keratitis since the withdrawal of ReNu MoistureLoc®, it has not been completely eliminated.[3] This raises concern about the antifungal efficacy of multipurpose solutions, and continued case reporting and further investigation into the pathogenesis is needed. Reasons for the selective increase in *Fusarium* keratitis in contact lens users remain speculative and factors such as alteration in virulence, in addition to the reduced efficacy of some multipurpose solutions,[4] may be important.

In conclusion, *Fusarium* keratitis should be considered in any case of contact lens-related keratitis. Topical steroids are not recommended until the initial laboratory information is available or clinical improvement is observed, given lack of evidence of effect on bacterial keratitis outcomes.[5] Practitioners must advise contact lens wearers of recent outbreaks and emphasise strict adherence to the recommended regimes with multipurpose solutions.

References

1 Chang DC, Grant GB, O'Donnell K, Wannemuehler KA, Noble-Wang J, Rao CY *et al.* Multistate outbreak of *Fusarium* keratitis associated with use of a contact lens solution. *JAMA* 2006; **296**: 953–963.

2 Galarreta DJ, Tuft SJ, Ramsay A, Dart JK. Fungal keratitis in London: microbiological and clinical evaluation. *Cornea* 2007; **26**: 1082–1086.

3 Jeng BH, Hall GS, Schoenfield L, Meisler DM. The *Fusarium* keratitis outbreak: not done yet? *Arch Ophthalmol* 2007; **125**: 981–983.

Characteristics	Case 1	Case 2	Case 3	Case 4
Age / Sex	50 yrs / Female	18 yrs / Female	37 yrs / Male	45 yrs/Male
Initial diagnosis	Presumed bacterial keratitis	Presumed bacterial keratitis	Presumed bacterial keratitis	Presumed bacterial keratitis
Best corrected vision on presentation (BCVA)	Counting fingers	6/12	6/36	6/6
Duration of symptoms prior to tertiary referral	2 weeks	2 weeks	10 days	1 week
Signs	4x3 mm fluffy white stromal infiltrate	3x3 mm fluffy white stromal infiltrate	1x1 mm fluffy stromal infiltrate	3x3 mm fluffy white stromal infiltrate with epithelial defect
Medications on referral	Ofloxacin, Prednisolone 0.5%	Ofloxacin	Ofloxacin, Fluoromethalone	Chloramphenicol, Dexamethasone
Contact lens / Contact lens solution	Monthly disposable / Bausch & Lombe ReNu MoistureLoc®	Monthly disposable / Bausch & Lombe ReNu MoistureLoc®	Monthly disposable / Bausch & Lombe ReNu MoistureLoc®	Two weekly disposable/ AMO Complete Moisture Plus®
Diagnosis	*Fusarium solani* on corneal biopsy, after negative corneal scrape	*Fusarium solani* after second corneal scrape	*Fusarium solani* on corneal scrape and contact lens culture, negative culture of contact lens solution	*Fusarium solani* and *Pseudomonas aeruginosa* (corneal scrape and contact lens solution)
Drug sensitivity	Amphotericin B, Econazole, Itraconazole, Voriconazole	Amphotericin B, Econazole, Voriconazole	Amphotericin B, Econazole, Voriconazole, Clotrimazole	ND
Drug treatment	G. Econazole 1% hourly and oral Voriconazole failed to prevent progressive keratitis	Oral Voriconazole for two weeks and G. Econazole 1% hourly tapering over six weeks.	G. Econazole 1% hourly tapering over 8 weeks.	G. Tobramycin and G. Amphotericin 0.15% for four weeks.
Clinical course	Therapeutic penetrating keratoplasty Postoperative G. Econozole 1%, G. Ciclosporin 0.02% with oral Voriconazole 200 mg twice daily. Topical steroids introduced six weeks postoperatively	Resolution of infiltrate with corneal scar	Resolution of infiltrate with corneal scar	Resolution of infiltrate with corneal scar
Length of follow up / BCVA	1 year / VA 6/12	4 months / VA 6/6	3 months / VA 6/5	4 months/ VA 6/4

AMO= Advanced Medical Optics, ND= not done, G.= guttae, BCVA= best corrected visual acuity

Figure 1 Table describing all four cases of *Fusarium* keratitis.

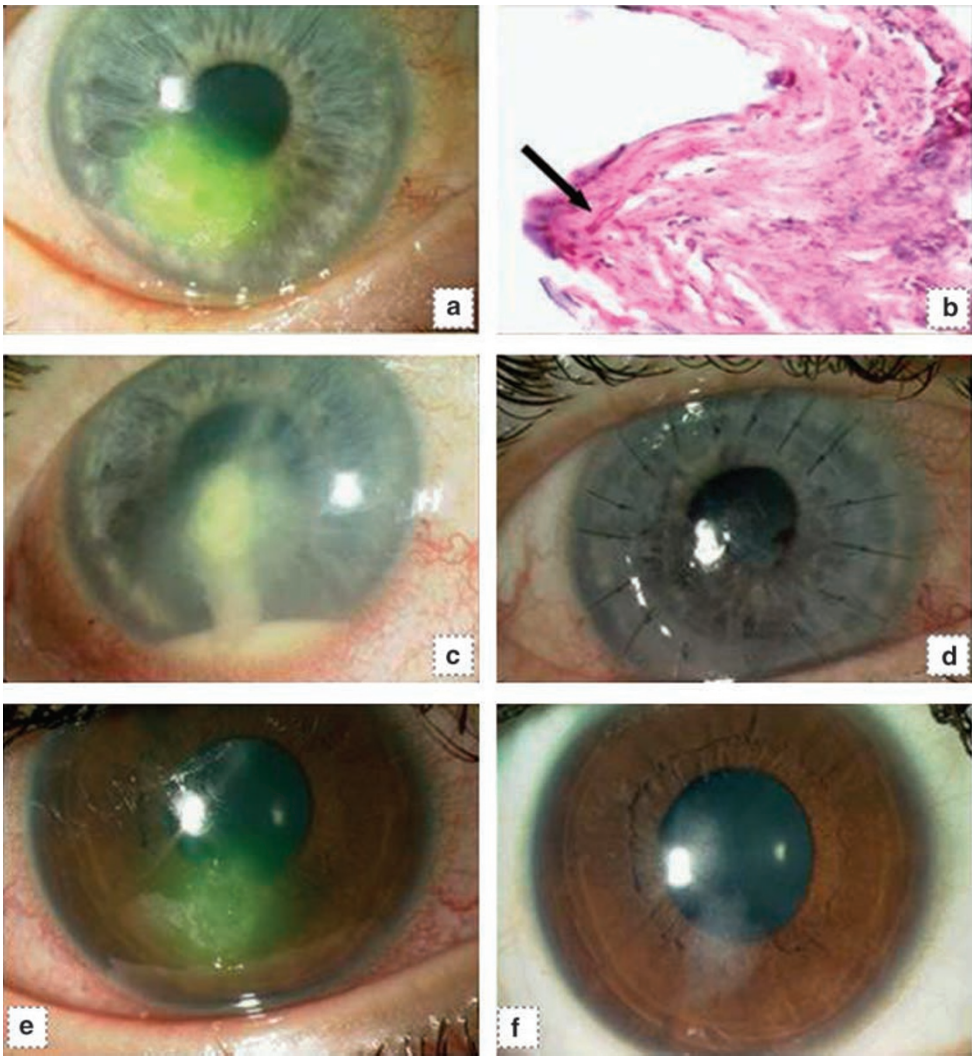

Figure 2 Composite illustration of case 1 (a–d) and case 2 (e–f). (a) *Fusarium* keratitis at the time of presentation, (b) corneal biopsy with periodic acid-schiff (PAS) stain showing septate hyphae in deep stroma (arrow) ×400 (c) worsening clinical course, and (d) following therapeutic keratoplasty. *Fusarium* keratitis in an 18-year-old contact lens wearer (case 2) before (e) and after (f) treatment.

4 Zhang S, Ahearn DG, Noble-Wang JA, Stulting RD, Schwam BL, Simmons RB *et al*. Growth and survival of *Fusarium* solani-F. oxysporum complex on stressed multipurpose contact lens care solution films on plastic surfaces *in situ* and *in vitro*. *Cornea* 2006; **25**: 1210–1216.
5 Wilhelmus KR. Indecision about corticosteroids for bacterial keratitis: an evidence-based update. *Ophthalmology* 2002; **109**: 835–842.

CS Daniel[1], MS Rajan[1], VPJ Saw[1], I Claerhout[2], P Kestelyn[2] and JKG Dart[1]

[1]Moorfields Eye Hospital, London, UK
[2]Department of Ophthalmology, Ghent University Hospital, Ghent, Belgium
E-mail: claire.daniel@moorfields.nhs.uk

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Sir,

Training problems in trabeculectomy

We read with interest the paper by Troutbeck *et al*.[1] There are not many articles published so far showing the outcome of the trainee and consultant's trabeculectomies. We recently carried out a study on this subject.

We agree that with the new antiglaucoma medications, the need for the trabeculectomy is reduced. The cases that require trabeculectomy are usually either not responding to maximum medical treatment or not suitable for it due to side effects, medical comorbidities, or poor compliance. Therefore, these cases are challenging. Troutbeck *et al*[1] mentioned in their study that the trainee performed trabeculectomies as a sole operator with or without supervision. Direct supervision throughout the trabeculectomy should improve the technique as well as predict and reduce early postoperative complications.

We note in this study that the trainee commonly performed phacotrabeculectomies or trabeculectomy