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Sir,
Incidence of post-operative endophthalmitis following 23-gauge transconjunctival sutureless vitrectomy in the United Kingdom: a survey

We carried out a confidential and anonymous 19-question online survey aimed at members registered on the Britain & Eire Association of Vitreoretinal Surgeons (BEAVRS) online forums, looking at rates of post-operative endophthalmitis following 23-gauge (23G) trans-conjunctival sutureless vitrectomy (TSV). Participants were asked to state the total number of 23G TSV cases performed in their career, and the number of cases of post-operative endophthalmitis that occurred from these. Endophthalmitis was not defined. Participants were asked to check surgical logbooks for accuracy before quoting case and complication numbers.

In all, 45/144 members registered on the BEAVRS online forums in April 2009 participated, giving a 31% response rate. Of the participants, 36% preferred 23G. Of these, the most popular port system was Alcon-based for 39, 52% had performed a two-step port entry technique, and 87% had performed a conjunctival sac wash with 5% povidone-iodine. In addition, 26% routinely used fluid-air exchange to prevent hypotony even when there was no other clinical indication for endotamponade, and 87% gave antibiotics sub-conjunctivally. A total of 4944 23G TSV cases were estimated to have been performed by 23 surgeons. Two cases of post-operative infective endophthalmitis were reported, giving an overall incidence rate of 1 in 2472 (0.040%).

This survey had a low response rate. This is likely due to the fact that the BEAVRS forums are open to membership from ophthalmic trainees and VR surgeons outside the United Kingdom (who were not eligible to participate), that not all UK VR surgeons practice 23G TSV (and therefore may have decided not to participate in the survey), and that some surgeons do not like discussing operative complication rates. Without documentary evidence, the numbers of cases performed as quoted by participants can only be taken as estimates.

Internationally published rates for 20G vitrectomy range from 0.018%¹ to 0.07%.² The only UK evidence quotes 0.038%.³ Therefore, the estimated rate of post-operative endophthalmitis of 0.040% for UK-based 23G TSV is acceptable when compared with these numbers. Obtaining a more accurate rate would require a prospective national audit with an open reporting system for complications.

Conflict of interest

The authors declare no conflict of interest.

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Sir,
Diagnosis of fungal keratitis by *in vivo* confocal microscopy: a case report

Fungal keratitis (FK) is a severe blinding eye disease and a major cause of ocular morbidity.¹ The clinical features of FK are not specific and the diagnosis is frequently not suspected until an aggressive treatment for bacterial, viral, or amebic keratitis has failed.

Case report

We report a case of a 65-year-old woman who developed a severe infectious keratitis in her left eye after a corneal injury caused by a tree branch and was initially treated by her family doctor with a local combination of tobramycin and dexamethasone. After 4 days she presented to an ophthalmology department for decreased vision and increased pain in her left eye. On initial evaluation, best-corrected visual acuity was hand movement in her left eye. Clinical examination revealed numerous purulent secretions, a conjunctival hyperaemia, and a large irregular whitish central corneal infiltrate (4.5 mm × 5 mm) with 1 mm hypopyon. The left eye fundus could not be visualized. Examination of her right eye was normal. Corneal scrapings were analysed by direct examination and culture. She was started on hourly topical fortified tobramycin, gentamicin and vancomycin, and oral levofloxacin. After 3 days, presence of *Pseudomonas aeruginosa* was identified, vancomycin and tobramycin were stopped, and topical fortified ceftazidime was added according to bacterial sensitivity. However, after 5 days of this treatment the corneal infiltrate increased in size and depth, and the hypopyon increased to 2 mm (Figure 1a). The patient was referred to our department for an *in vivo* confocal microscopy (IVCM) examination.

Interestingly, IVCM images (Heidelberg Retina Tomograph 3—Rostock Cornea Module, Heidelberg Engineering, Heidelberg, Germany) of the left eye

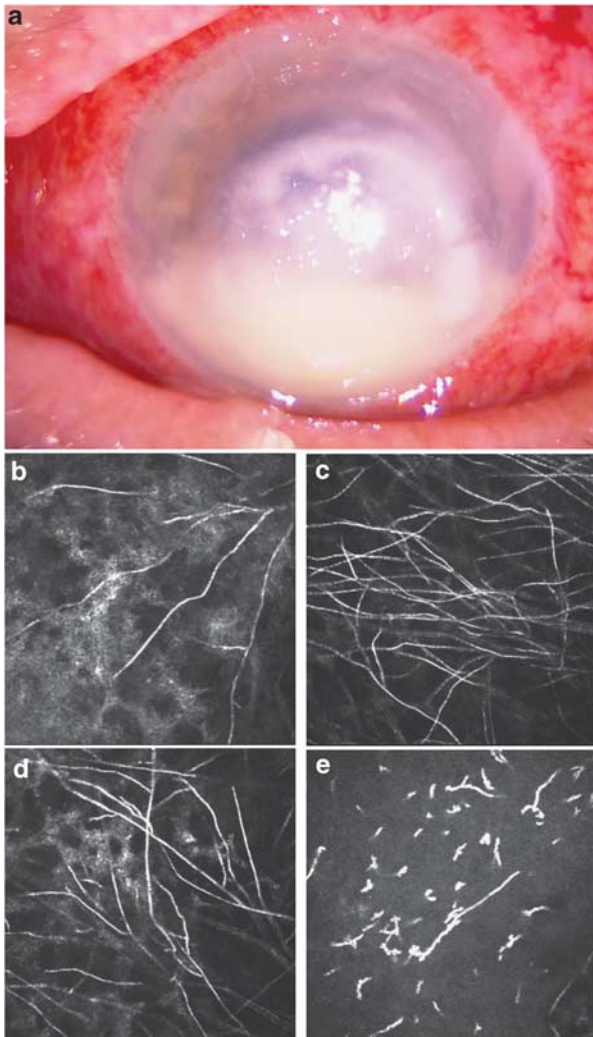


Figure 1 (a) Photography of the left eye showing a large corneal central whitish irregular infiltrate with 2 mm hypopyon. (b–d) *In vivo* confocal microscopy images ($400 \times 400 \mu\text{m}^2$) showing numerous hyper-reflective interlocking and branching linear structures, $5\text{--}7 \mu\text{m}$ width and $200\text{--}400 \mu\text{m}$ length, possibly corresponding to fungal hyphae. These images were obtained in the stroma at the boundaries of the central corneal infiltrate: (b) in the nasal area, depth: $115 \mu\text{m}$; (c) in the superior area, depth: $223 \mu\text{m}$; (d) in the superior area, depth: $106 \mu\text{m}$. (e) *In vivo* confocal microscopy image ($400 \times 400 \mu\text{m}^2$) of the corneal stroma ($45 \mu\text{m}$ depth) showing a stromal oedema with infiltration of inflammatory cells. The stroma appeared as a dark background with hyper-reflective small structures with an occasional dendritic-like pattern corresponding to inflammatory cells.

showed hyper-reflective, thin, and branching interlocking linear structures in the stroma, $5\text{--}7 \mu\text{m}$ in width and $200\text{--}400 \mu\text{m}$ in length, possibly corresponding to filamentous fungi (Figure 1b and c and Supplementary video online). These hyper-reflective structures were detected on the boundaries of the central corneal infiltrate at depths varying from 100 to $300 \mu\text{m}$ and were surrounded by oedema and infiltration of inflammatory cells (Figure 1d).

Topical amphotericin B and topical and systemic voriconazole were added to the previous treatment. A penetrating keratoplasty was performed because of a perforation that occurred 5 days later, and the direct examination and culture of the cornea confirmed the presence of a *Fusarium* sp within the stroma.

Comments

This case of bacterial and FK demonstrates the usefulness of IVCM for the diagnosis of filamentous fungal keratitis. Initial corneal scrapings were negative for fungi probably because of the localization of the hyphae deeper in the stroma. In such cases, IVCM can visualize filamentous fungi within the whole cornea of patients and may be helpful in managing this disease by providing a rapid diagnosis so that treatment may be initiated earlier.²

Fungal hyphae were observed with IVCM at the boundaries of the corneal infiltrate, where a better visualization of corneal structures and probably fungal hyphae is obtained. To carry out this dynamic examination and to enhance the effectiveness of IVCM, it must be performed but also interpreted by an experience operator.² Despite these limitations, IVCM remains a valuable diagnostic modality for FK as recently confirmed by Vaddavalli *et al.*,³ who demonstrated in a controlled study a sensitivity of 89.2% and a specificity of 92.7% of IVCM for the diagnosis of FK as compared to standard microbiology.

Conflict of interest

The authors declare no conflict of interest.

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Sir,
Peer-reviewed publication of abstracts presented at the Royal College of Ophthalmologists (RCOphth) Annual Congress

Approximately 50% of the abstracts initially presented at scientific meetings will never be published in peer-reviewed journals.¹ Such unpublished research is therefore not available via electronic databases (eg, MEDLINE) to clinicians or to those undertaking systematic literature reviews.

The Cochrane review¹ included 79 studies, only three from ophthalmic meetings, all being from North America in the 1980s. We therefore conducted a PubMed literature search using each author from the abstracts of the 'Final Programme and Abstracts' RCOphth Congress 2004 (search performed 61 months after the congress submission closing date). A publication was deemed to relate to the same work as the abstract if at least one author, methodology, or at least one of the conclusions of the study were the same to allow for subsequent continued recruitment.²

Of the 179 abstracts, 64 (35.8%; 95% CI 29–43%) reached full publication in peer-reviewed journals, most frequently *Eye* (23/64) and *British Journal of Ophthalmology* (18/64). The mean time that elapsed between Congress 2004 and the publication was 20.1 months (95% CI 16.9–23.4 months) (see Figure 1).

Multivariate analysis of the factors influencing publication revealed that the number of authors showed significant positive correlation with subsequent publication rate: abstracts with only one or two authors (26% subsequently published) compared with 36% for 3–5 authors and 50% for 6-or-more authors.

Other factors analysed failed to show any significant difference in subsequent publication rates; posters only

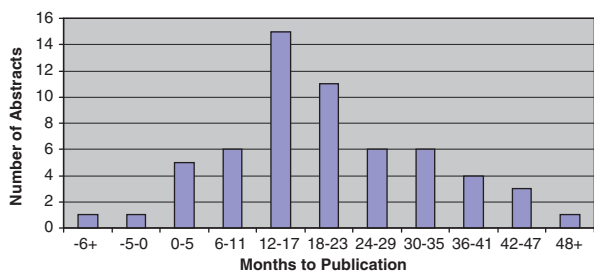


Figure 1 Time elapsed to publication following RCOphth Congress 2004.

(35% later published)/podium presentations (41%); prospective studies (33%)/retrospective (33.9%); UK only research (35%)/international collaboration (45%); basic-science research (41.7%)/clinical research (36.5%)/service delivery-related studies (26.3%). Publication bias is a well-recognised phenomenon, but research reporting statistically significant (44.4%) and non-significant (43.6%) results were equally likely to be published.

Lead authors based in a teaching hospital or university were more successful (39.5%) in getting papers published than those working in non-academic settings (28.3%).

Nearly two-thirds of the studies presented at the abstract at the RCOphth Congress 2004 had not been published in peer-reviewed journals more than 5 years after the closing date for submission. Studies with larger numbers of authors were more likely to reach publication, possibly because involvement of more authors may mean that there are more people to scrutinise the design and conduct of the research, review drafts, and improve overall quality.

Conflict of interest

The authors declare no conflict of interest.

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Sir,
Response to 'Spontaneous sub-conjunctival haemorrhage in patients using long-term topical corticosteroids'

I read with interest the article by Mercieca *et al*¹ describing a higher incidence of subconjunctival haemorrhage in a cohort of uveitic patients who were on long-term topical steroid therapy compared with a comparison group of patients using glaucoma medication. Although they describe systemic hypertension as a risk factor for subconjunctival haemorrhage, they did