Table 1 The individual keratometry methods are compared by calculating the predicted spherical equivalent refractive error, assuming the surgical technique would have been the same for whatever lens used

Keratometry method	*K1/D*	*K2/D*	*Axis*	*Axial length/mm*	*Calculated intraocular lens for target refraction −1.0 D*	*Outcome refraction spherical equivalent/ dioptres*	*Error from prediction/ dioptres*
SimK topograph	46.25	45.50	30	23.43	19.5	+0.50	+1.50
Nidek	46.04	44.12	33	23.43	20.0	−0.30[a]	+0.83
Reichert (von Helmholtz)	45.00	45.00	180	23.43	20.5	−0.75	+0.25

Von Helmholtz keratometer would have been the best choice for this particular patient.
[a]Simulated values.

spherical error would have been +0.25 with a final refraction of ~−0.8 D. The Reichert (von Helmholtz type) keratoscope would in retrospect have been the better choice, but in the event the patient is happy and our case is anecdotal—a 'series' too small to be statistically robust.

Our patient has achieved BCVA of 6/5, although naturally is slightly myopic in the fellow eye, and is pleased with visual outcome. His result is within his own expectation and no further intervention is sought.

It has been suggested that people should use goggles prophylactically while fishing, but the author's experience is that these are little used though many anglers wear spectacles especially Polaroids™ to enhance visualisation of fish below the surface of the water.

References

1 Deramo VA, Maus M, Cohen E, Jeffers J. Removal of a fishhook in the eyelid and cornea using a vertical eyelid-splitting technique [comment]. *Arch Ophthalmol* 1999; **117**(4): 541–542.
2 Malhotra R, Tappin M, Olver JM. Angler's fishing line sinker causing rupture of globe and medial wall fracture. *Eye* 1999; **13**(Part 2): 260–262.
3 Katsumata S, Takahashi J, Tamai M. Chorioretinitis sclopetaria caused by fishing line sinker. *Jpn J Ophthalmol* 1984; **28**(1): 69–74.
4 Aiello LP, Iwamoto M, Guyer DR. Penetrating ocular fish-hook injuries. Surgical management and long-term visual outcome [comment]. *Ophthalmology* 1992; **99**(6): 862–866.
5 Kuljaca Z, Markovic P. Penetrating ocular fish-hook injury. *Eye* 1995; **9**(Part 3): 385–386.
6 Grand MG, Lobes Jr LA. Technique for removing a fishhook from the posterior segment of the eye. *Arch Ophthalmol* 1980; **98**(1): 152–153.
7 Mandelcorn M, Crichton A. Fish Hook removal from vitreous and retina: case report. *Arch Ophthalmol* 1980; **107**: 493.
8 Ciulla TA, Mukai S, Miller JW. Severe penetrating eye trauma caused by fish pick accidents. *Retina* 1996; **16**(3): 219–221.
9 Christoffersen T, Olsen EG. Injury to the cornea due to fish bile. *Scand J Work, Environ Health* 1993; **19**(5): 358–359.
10 Cua IY, Qazi MA, Lee SF, Pepose JS. Intraocular lens calculation in patients with corneal scarring and irregular astigmatism. *J Cataract Refract Surg* 2003; **29**: 1352–1357.
11 Haigis W. Corneal power after refractive surgery for myopia: contact lens method. *J Cataract Refract Surg* 2003; **29**: 1397–1411.

A Awan[1] and JA Scott[2]

[1]Wolverhampton Eye Infirmary, Wolverhampton WV3 9QR, UK

[2]Stirling Royal Infirmary, Stirling, UK

Correspondence: A Awan,
Senior House Officer,
Wolverhampton Eye Infirmary,
Wolverhampton WV3 9QR, UK
Tel/fax: +44 190 242 9215.
E-mail: dramer_awan@yahoo.co.uk

None of authors has a financial or proprietary interest in any material or method used

Eye (2006) **20,** 1084–1086. doi:10.1038/sj.eye.6702117; published online 30 September 2005

Sir,

Kingella kingae orbital cellulitis in a 3-year-old

Orbital cellulitis requires prompt diagnosis and treatment to prevent visual or life-threatening complications. We report an unusual case and cause of orbital cellulitis in a 3-year-old, managed conservatively with a good outcome visually and systemically.

Case report

A 3-year-old boy presented to the accident and emergency department with a 3-day history of cough and cold, a 1 day history of right periorbital swelling and drowsiness. The periorbital swelling had increased dramatically in a 24-h period preceding admission associated with systemic features of fever (38.5°C), nausea, and malaise. Ophthalmology review revealed a tense orbit with periorbital erythema and oedema, with 5 mm of nonaxial proptosis with a hypotropic and exodeviated eye. There was marked conjunctival injection with some chemosis, with no evidence of corneal exposure. There was no relative afferent pupillary defect and no evidence of disc swelling. Ocular motility was restricted in all directions of gaze more marked on dextro depression. Serological investigations including a full blood count revealed a moderate leucocytosis and blood cultures were taken on presentation. Axial and coronal CT scanning of the orbit and brain revealed extensive ethmoidal and maxillary sinusitis, marked periorbital soft tissue enhancement and proptosis, and an area suspicious for enhancement in the right frontal lobe of the brain. Initial antibiotic therapy of i.v. augmentin and flucloxacillin was changed to i.v. piperacillin and gentamicin upon microbiology review. Neurosurgical and ENT review recommended conservative therapy. On review, 1/7 postadmission, the proptosis had lessened to 4 mm. On review, day 3 of admission, there was reduced proptosis (3 mm) and a recovering range of ocular motility. A repeat CT (Figure 1) scan revealed a large subperiosteal abscess with intraorbital emphysema, with resolution of the previously suspicious area for enhancement in the right frontal lobe. The presence of intracranial free air in the frontal lobe was demonstrated. Review day 4 showed continued improvement on i.v. piperacillin and gentamicin. Continued neurosurgical and ENT review advised conservative management. The patient

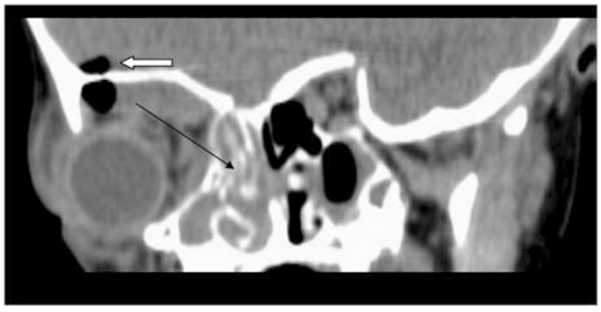

Figure 1 Reconstructed coronal CT scan showing surgical emphysema in R supero-lateral orbit (white arrow) and dense ethmoidal sinusitis (black arrow). Note also intracranial gas in the right frontal lobe. Note clear sinus on the contralateral side.

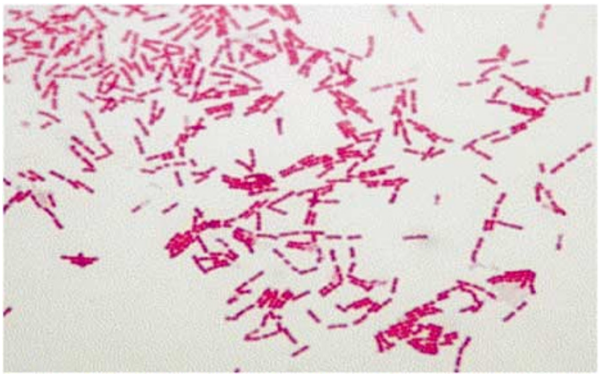

Figure 2 *Kingella kingae* microorganism on Gram stain.

continued to improve systemically and clinically over the next 2 days with the proptosis measuring 2.5 mm. Visual acuity assessment was 3/3 on Kays picture acuity cards throughout. On day 7, blood culture (taken on admission) isolated *Kingella kingae* microorganism sensitive to piperacillin and gentamicin (Figure 2). The patient continued to improve and was discharged on day 11 with 1.5 mm proptosis, increasing range of extraocular movements and visual acuity of 3/3 on Kays pictures. Systemic examination was normal. On examination at 1 month, the proptosis had fully resolved with a full range of extraocular movements and normal visual acuity.

Comment

Orbital cellulitis is potentially a life- and sight-threatening disease, and in the preantibiotic era the mortality rate was 17 and 20% of the survivors were blind in the affected eye.[1] Complications can include loss of vision secondary to optic nerve compression or exudative retinal detachment, cavernous sinus thrombosis, meningitis, and intracerebral abscess formation.[2] The disease starts in the ethmoid sinus in children (poor development of other sinuses) and the infection spreads into the subperiosteal lining of the orbit through the ethmoid, leading to subperisosteal abscess formation. Affected children tend to be ill systemically, have a significant fever, and all will have radiographic evidence of sinusitis, particularly the ethmoid on the affected side. Pain on eye movement, pain on touch, proptosis, and restriction of extra-ocular muscles are late signs of disease. The subperiosteal abscess is often mananged conservatively in children in contrast to adults, unless the patient develops signs of a compressive optic neuropathy or exposure keratopathy.[3] The most common microorganisms causing orbital cellulitis are *H. influenza*, *streptoccus*, *staphyloccus*, or *diploccus*.

Blood culture at day 7 in the above case isolated *K. kingae*. *K. kingae* is a short Gram-negative medium-sized

coccus or rod with tapered ends exhibiting features of B-haemolyis, with an aerobic or facultative anaerobic metabolism.[4] There are four known species of *Kingella* (*K. indologenes*, *K. dentrificans*, *K. oralis* and *K. kingae)*. They are rare causes of human disease with a recent increase in pathogenecity due to improved isolation techniques.[5,6] They are very slow-growing and fastidious microorganisms and colonise the throat of young children especially males from 6 months to 4 years. There are seasonal peaks of incidence in winter and autumn, and clinically commonly cause skeletal infections in long bones, endocarditis, and bacteraemia. There have been no reports in the literature of *K. kingae* causing orbital cellulitis. Isolating the microorganism from peripheral blood indicates a substantial inoculum and is not isolated as a commensal organism.[7]

Two previous reports isolated *K. kingae* from a corneal scraping in a case of endo-ophthalmitis.[8] No reports pertaining to orbital cellulitis have been reported. We report an unusual cause of orbital cellulutis in a 3-year-old. With improved isolation techniques, this organism as a potential cause of orbital disease needs to be investigated, especially when one considers the potential cardiac and other bony associations, including septic arthritis, osteomyelitis, dactylitis, and infective endocarditis.

References

1 Kyprianou I, D'souza A, Saravanappa N, Lewis DM, Courtney-Harris R. Referral patterns in paediatric orbital cellulitis. *Eur J Emerg Med* 2005; **12**(1): 6–9.
2 Hermann BW, Forsen JW. Simultaneous intracranial and orbital complications in acute rhinosinusitis. *Int J Pediatr Otorhinolaryngol* 2004; **68**(5): 619–625.
3 Greenberg MF, Pollard ZF. Medical treatment of paediatric subperiosteal orbital abscess secondary to sinusitis. *J AAPOS* 1998; **2**(6): 351–355.
4 Yagupsky P, Peled N, Katz O. Epidemiological features of invasive *Kingella Kingae* infections and respiratory carriage of the organism. *J Clin Microbiol* 2002; **40**(11): 4180–4184.
5 Yagupsky P, Kingella K. From medical rarity to emerging paediatric pathogen. *The Lancet. Infectious Diseases* 2004; **4**: 358–367.
6 Amadeu MD, GarcÍa-GarcÍa JJ. Enhanced culture detection of *Kingella Kingae*—an emerging paediatric pathogen. *Pediatr Infect Dis J* 2004; **23**(9): 886–888.
7 Johnson AS, Touchie C, Haldane DJ. Four day incubation for the detection of bacteraemia using BACTEC 9240. *Diagn Microbiol Infect Dis* 2000; **38**(4): 195–199.
8 Preston S, Clark W. Bilateral endo-ophthalmitis caused by a HACEK organism. *Am J Ophthalmol* 2002; **133**: 144–145.

PP Connell, B Carey, D Kollpiara and S Fenton

Cork University Hospital, Cork, Ireland

Correspondence: PP Connell,
Ophthalmology,
Royal Victorai Eye and Ear,
Adelaide Road, Dublin 2, Ireland.
Tel: +86 812 1494;
Fax: +353 1 676 1858.
E-mail: drpaulconnell@gmail.com

Eye (2006) **20,** 1086–1088. doi:10.1038/sj.eye.6702119; published online 21 October 2005

Sir,

Ophthalmomyiasis externa caused by *Dermatobia hominis*: a successful treatment with oral ivermectin

Ophthalmomyiasis refers to infestations of the eye and/or ocular annexa by larvae of the order Diptera and represents less than 5% of the cases of human myiasis. When larvae remain outside of the eye, it is termed ophthalmomyiasis externa, while penetration of the eye itself is termed ophthalmomyiasis interna, a severe condition that may lead to blindness.[1–3]

Dermatobia hominis may very occasionally cause ophthalmomyiasis externa, with eyelid, and conjunctival involvement.[4–6] Conventional treatment consists of the removal of the larvae from the affected sites, although sometimes access is difficult to such areas.[4,7] This paper describes a case of ophthalmomyiasis externa caused by *D. hominis* in a child successfully treated with oral ivermectin, making surgical extraction by incision and exploration unnecessary.

Case report

An 11-year-old boy, with a complaint of 5 days of pain, slight pruritus, and oedema in his right inner canthus, was brought to the Department of Ophthalmology, State University of Campinas, Brazil. There was no history of previous ocular surgeries, and he was not taking any ocular medications. He was in good general health with no systemic symptoms. There was no history of exposure to animals other than household pets.

On examination, he had a visual acuity of 20/20 with no spectacle correction, a normal extraocular motility and fundus findings. A small erythematous lesion with a well-demarcated punctum in the centre, and periorbital oedema were noted in the right inner canthus. On slit-lamp examination, small yellowish organism and a serous purulent fluid drained from the punctum (Figure 1) were observed. Since attempt to remove the larva by means of a forceps was unsuccessful, the patient was given a single oral dose of ivermectin (200 μg/kg). In