MAILBOX

Diagnosis of external ocular infections: microbiological processing and interpretation

EDITOR,—I read with interest the recently published article by Pinna et al.1 I compliment the authors for bringing to light the important issue of external ocular infections associated with coagulase negative staphylococci (CoNS). Ocular microbiologists rarely pay attention to the speciation of this group of bacteria and various species involved in ocular infections are generally passed off as Staphylococcus species or CoNS. However, in isolation, this group of staphylococci needs special attention with respect to their role in pathogenicity. Generally, S. epidermidis and other CoNS along with corynebacteria and propionibacteria are normal commensals of the conjunctival sac and lids; therefore samples from the external ocular surface resulting in a light growth on primary solid culture medium like blood agar or from a thioglycolate broth, are more likely to be contaminated with skin flora.2 In our laboratory and many others across the world, a bacterial isolate (more so a known commensal organism) from corneal scrapings or conjunctival/lid smears is considered significant if it is consistent with the clinical signs and fulfils any one of the following criteria: (1) results of direct smear of the sample are consistent with culture; (2) the same organism is grown in more than one medium; or (3) the same organism is grown from repeated specimens. However, Pinna et al.1 in their article, have not indicated adherence to any such criteria while selecting isolates for their study, though they have labelled the 55 isolates tested by them “clinically significant”. Their methodology of including just two media (thioglycolate broth and Sabouraud’s dextrose agar) as primary culture medium for the detection of aerobic and anaerobic bacteria in external ocular specimens performed about 12 hours after the last dose of medication showed eradication of the infecting organism in all 45 patients. According to our and other authors’ experience (Leverent DB, presented at the AAO Annual Meeting, San Francisco, 1997), thioglycolate broth is an adequate, cost effective, primary culture medium for the detection of aerobic and anaerobic bacteria in external ocular infections, especially when the patients show clear signs and symptoms of infection. Antibiotic susceptibility tests were determined by agar disc diffusion (Kirby-Bauer method). The disc diffusion technique requires labelling of bacteria as resistant, sensitive, or intermediate. The authors have not clarified the way the “intermediate” group was dealt with, or was no such group noticed in any of the 55 isolates tested by them? Similarly, the reason for testing susceptibility to penicillin is far from clear since CoNS are known to be resistant to penicillin and penicillin is not commonly used to treat external ocular infections. Moreover, much valuable data could have been obtained by determining the minimum inhibitory concentration of the antibiotics against CoNS.

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Laser pointers can cause permanent retinal injury if used inappropriately

EDITOR,—The authors previously published a brief report in a widely circulated ophthalmic review periodical (Eye News) on the potential risk of permanent injury from the inappropriate use of laser pens.1 The article had been prompted by two events—firstly, a flood of reported cases in the popular media of the “blinding” effects of laser pens on police officers, soccer goalkeepers, and members of the general public, and, secondly, the referral to our department for clinical assessment of police and fire service personnel who had been exposed to laser pen light. Examination of the clinical cases demonstrated no permanent injury. We were also asked to review data determined for a number of laser pens that had been subjected to analysis by Edinburgh Environmental and Consumer Services Department. Many of these laser pens were mislabelled, either by exhibiting American standard classification (different from European), or simply by being inaccurately classified. Subsequently, a number of laser pens have been sent to us for examination, pending police investigations. Many of these lasers are class 3B devices according to the European laser classification, and are therefore considered potentially hazardous. None the less, we conclude that the normal blink and aversion response would prevent retinal damage from transient exposure. However, it had also been brought to our attention that the cost of these laser pens, and laser key rings, was such that they were being provisioned based upon the assumption that the lasers were class 1 devices. The authors state that "10 mW is the maximum optical output of a standard laser pointer".2 However, currently available laser pens are capable of emitting a ‘white’ laser light of 500 mW, and emitting other wavelengths (green and blue) of up to 300 mW.3


Table 1 Antibiotic susceptibility testing of coagulase negative staphylococci

<table>
<thead>
<tr>
<th>Species</th>
<th>Penicillin</th>
<th>Gentamicin</th>
<th>Tetracycline</th>
<th>Erythromycin</th>
<th>Ciprofloxacin</th>
<th>Teicoplanin</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. epidermidis</td>
<td>0/42*</td>
<td>5/42</td>
<td>1/36†</td>
<td>0/42</td>
<td>0/42</td>
<td>0/42</td>
</tr>
<tr>
<td>S. simulans</td>
<td>0/4</td>
<td>0/4</td>
<td>0/4</td>
<td>0/4</td>
<td>0/4</td>
<td>0/4</td>
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<tr>
<td>S. capitis</td>
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<td>0/3</td>
<td>0/3</td>
<td>0/3</td>
<td>0/3</td>
</tr>
<tr>
<td>S. hominis</td>
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<td>1/2</td>
<td>0/2</td>
<td>0/2</td>
<td>0/2</td>
<td>0/2</td>
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<tr>
<td>S. xylosus</td>
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<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td>S. simulans</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td>S. epidermidis</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
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<tr>
<td>S. haemolyticus</td>
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<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td>S. simulans</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td>Total</td>
<td>0/55</td>
<td>6/55</td>
<td>1/49†</td>
<td>0/55</td>
<td>1/55</td>
<td>0/55</td>
</tr>
</tbody>
</table>

*Numbers indicate intermediate isolates/total isolates.
†Susceptibility to tetracycline was not performed in six isolates.
purchased by children. A new version of the traditional, and dangerous children’s game of “chicken” had developed in relation to these new “toys”, the game of “chicken” being won by the child who could stare directly into the laser beam for the longest period. We concluded, “this makes lasers potentially very dangerous in the hands of children”. Fortunately, trading standards agencies throughout the UK have moved to ban sale of these laser pens and have also inappropriately in that if a supratherapeutic exposure had been sustained then a leek would have been apparent, not a window defect. Finally, the authors discuss the possibility that this individual may have been at high risk as a result of racial pigmentation. Again this is erroneous, because although a marginally higher risk would have been conferred by melanin for thermal insult, greater pigmentation would have lowered the risk in relation to a greater than 10 second photochemical mechanism. Given the inability of a 5 mW system to generate thermal transients of sufficient magnitude to induce retinal damage, and in the absence of an empirical biophysical study, their case does not support their conditions.

In their final paragraph, McGhee et al agree that the risks of permanent retinal injury are remote, but they state that “there can never be zero risk”. In all safety criteria documents the aim is to reduce risk to an insignificant level. I reiterate that current US safety standards satisfy these criteria. I also reiterate that, notwithstanding the report of Luttrull and Hallisey, to date there is no evidence of irreversible retinal damage sustained from viewing laser pointers.

John Marshall
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Reply

EDITOR,—In writing this article I addressed five issues. Firstly, to counteract media “hype” on the “blinding potential” of laser pointers by explaining the biophysical principles involved in beam tissue interactions and, as a consequence, the notion that certain lasers are such devices as retinal hazards. Secondly, I wished to address a degree of confusion generated by a misleadingly titled, well circulated, but non-peer reviewed paper. Thirdly, I wished to give guidance to casualty and medical personnel first confronted with individuals who had experienced exposure to laser pointers. Fourthly, I thought it helpful to explain the differences in fundamental problem implicit in all laser safety data that is empirical data only exist where laser wavelengths and time domains have importance to military applications. Throughout the world almost all of the data have been generated by military funding. There are two consequences which arise from such a database: the first is that we have no ED50 data for many common lasers, including those used in CW lasers; the second is that safety authorities might err on the side of caution and, as a result, the codes of practice have huge safety margins in order to secure protection.

McGhee et al cite a recent article as an indication of my conclusion concerning the laser safety pointers were erroneous. Far from supporting their statement, careful reading of the cited paper merely highlights one of the problems adduced: namely, guilt by association. Luttrull and Hallisey were confronted by a patient whose visual acuity was 20/20. Would the fundus of the individual have an output of 670 nm. Although the subject maintained macular involvement had been established, and a fluorescein angiogram 20/20. Would the fundus of the individual have been examined, and a fluorescein angiogram been performed to rule out eye movement displacement of the retinal image and could not result in thermal damage. In a previous study we exposed stabilised animal eyes to a 5 mW HeNe laser for 5 minutes without observing retinal damage.

Remember also, that in order to observe retinal damage from clinical diode laser systems 50 mW or more are required. In the cited paper, the patient claimed to have noted a red central scotoma but presumably should have seen a green afterimage. The headache reported is indicative of anxiety rather than being related to any retinal damage mechanism. The finding of a window defect on ultrasound was also inappropiate in that a supratherapeutic exposure had sustained then a leek would have been apparent, not a window defect. Finally, the authors discuss the possibility that this individual may have been at high risk as a result of racial pigmentation. Again this is erroneous, because although a marginally higher risk would have been conferred by melanin for thermal insult, greater pigmentation would have lowered the risk in relation to a greater than 10 second photochemical mechanism. Given the inability of a 5 mW system to generate thermal transients of sufficient magnitude to induce retinal damage, and in the absence of an empirical biophysical study, their case does not support their conditions.

In their final paragraph, McGhee et al agree that the risks of permanent retinal injury are remote, but they state that “there can never be zero risk”. In all safety criteria documents the aim is to reduce risk to an insignificant level. I reiterate the current US safety standards satisfy these criteria. I also reiterate that, notwithstanding the report of Luttrull and Hallisey, to date there is no evidence of irreversible retinal damage sustained from viewing laser pointers.

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External eye infections

The latest issue of Community Eye Health (no 30) discusses external infections of the eye. Included are papers on conjunctivitis, corneal ulcer, and transmission and control of infection. For further information please contact Community Eye Health, International Centre for Eye Health, Institute of Ophthalmology, 11–43 Bath Street, London EC1V 9EL. (Tel: (+44) 171 608 6909/6910/6923; fax: (+44) 171 250 3207; email: eyeresource@ucl.ac.uk) Annual subscription £25. Free to workers in developing countries.

NOTICES
Residents' Foreign Exchange Programme

Any resident interested in spending a period of up to one month in departments of ophthalmology in the Netherlands, Finland, Ireland, Germany, Denmark, France, Austria, or Portugal should apply to: Mr Robert Acheson, Secretary of the Foreign Exchange Committee, European Board of Ophthalmology, Institute of Ophthalmology, University College Dublin, 60 Eccles Street, Dublin 7, Ireland.

16th Congress of the International Society for Geographical and Epidemiological Ophthalmology (ISGEO

The 16th Congress of the ISGEO will be held at the Institut D'Ophthalmologie Tropicale De L'Afrique (IOTA) in Bamako, Mali on 21–22 February 2000. Further details: Dr Paul Courtright, ISGEO Secretary, BC Centre for Epidemic & International Ophthalmology, University of British Columbia, St Paul's Hospital, 1081 Burrard Street, Vancouver, BC V6Z 1Y6, Canada (email: pcourtright@stpaulshosp.bc.ca; website: www.interchange.ubc.ca/bccie/isgeo).

Office of Continuing Medical Education

The Baylor College of Medicine, Cullen Eye Institute, Department of Ophthalmology is presenting a course entitled “The Cullen course 2000—clinical advances in ophthalmology for the practising ophthalmologist” at the Houstonian Hotel and Conference Center, 111 North Post Oak Road, Houston, Texas from 3–5 March 2000. Further details: Carol J Sorkola, Conference Coordinator, Office of Continuing Medical Education, Baylor College of Medicine, One Baylor Plaza-S104, Houston, TX 77030, USA. (Tel: 713 798-5600.)

Leonard Klein Foundation

The Leonard Klein Foundation in the Donors’ Association for the Promotion of Sciences and Humanities in Germany is to bestow the Leonard Klein Award 2000 of DM 30 000 for innovative work in the development and application of microsurgical instruments and microsurgical operating techniques. Deadline for applications is 31 March 2000. Further details: Sifterverbad fur die Deutsche Wissenschaft e V, Herrn Peter Beck, Postfach 16 44 60, D-45224 Essen, Germany.

American Institute of Ultrasound in Medicine

The American Institute of Ultrasound in Medicine will hold the 44th annual convention in San Francisco, California on 2–5 April 2000. Further details: AIUM Professional Development Department, 14750 Sweitzer Lane, Suite 100, Laurel, MD 20707-5906 (tel: 800-638-5353; fax: 301-498-4100; email: com.edu@aium.org; website: www.aium.org).

XXII Tuebingen Detachment Course

The XXII Tuebingen Detachment Course, retinal and vitreous surgery, will be held in the congress centre Incheba, Bratislava, Slovak Republic 6–7 April 2000 preceding the congress on retinal detachment of the Slovak Ophthalmological Society 8–9 April 2000. Further details: Professor Peter Strmen 81369 Bratislava, Miklavcikiewiza 13 (tel/fax: 00421-7-52964641; email: strmen@faneba.sk).

VIIIth Mediterranean Ophthalmological Society

The combined meeting of the VIIIth Mediterranean Ophthalmological Society and the VIIIth Michaelson Symposium on Ocular Circulation and Neovascularisation will be held in Jerusalem on 21–26 May 2000. Further details: Secretariat, c/o Unitors Israel Ltd, PO Box 3190, 61031 Tel Aviv, Israel (tel: +972-3-5290099; fax: +972-3-5239099; email: meetings@unitors.co.il).

The VIIIth Michaelson medal and award will be delivered on 24 May 2000 in Jerusalem. The medal and award ($5 000 monetary prize) are sponsored by the Israel Academy of Sciences and Humanities and by the Hadasah Hebrew University Hospital and Medical School of Jerusalem, Israel. Nominations are sought from the ophthalmic community at large. Suggestions and reasons for choice and CV highlights should be sent to Professor Daniel BenEfraim, Secretary for the International Nominating Committee, Pediatric Ophthalmology Unit, Hadassah Hebrew University Hospital, PO Box 12000, Jerusalem 91120, Israel.

5th International Vitreoretinal Meeting–IIV 2000

The 5th International Vitreoretinal Meeting–IIV 2000 will be held in Parma, Italy, on 26–27 May 2000. The main topics will include “Hypotony and glaucoma in vitreoretinal surgery”, “Internal limiting membrane surgery”, “Macula oedema”, “Open globe injuries”, and “News in retinal pigment epithelium”. Further details: Dr Canuto, MA De Giovanni, or S Tedesco, Scientific Secretary, Institute of Ophthalmology, University of Parma, Via Gramsci 14, 43100 Parma, Italy (tel: +39 0521 259106; fax: +39 0521 292358; email: nuzzi@iprunic.cce.unipr.it).

International Strabismological Association

The International Strabismological Association (ISA) has established fellowships for training in strabismus and paediatric ophthalmology, supported by $US 10 000 each. Further details: Secretary/Treasurer ISA, Derek T Sprunger, MD, Indiana University School of Medicine, 702 Rotary Circle, Indianapolis, Indiana 46202-5175, USA. The last day of application is 15 June 2000 (tel: 317-274-1214; fax: 317-274-1111).

XXIV Nordic Congress of Ophthalmology

The XXXIV Nordic Congress of Ophthalmology will be held in Reykjavik, Iceland, 18–21 June 2000. This meeting celebrates the 100 year anniversary of the Nordic Ophthalmology Conference. Further details: Iceland Incentives Inc, Hamarborg 1–3, Is-Kópavogur, Iceland (tel: +354 554 1400; fax: +354 554 1472; email: incentiv@tnf.is).

13th Annual Meeting of German Ophthalmic Surgeons

The 13th annual meeting of German Ophthalmic Surgeons will be held on 15–18 June 2000 at the Meistersingerhalle, Nuremberg, Germany. Further details: MCN Medizinische Congress-organisation Nuremberg AG, Zerrazehlshofstrasse 29, D-90478 Nuremberg, Germany (tel: +49-911-3931621; fax: +49-911-3931620; email: doerflinger@mcn-nuernberg.de).

Joachim Kuhlmann Fellowship for Ophthalmologists 2000

The Joachim Kuhlmann AIDS Foundation, Essen, Germany, is sponsoring two fellowships per year for ophthalmologists at a well known institute, who want to train in CMV retinitis and other HIV related ophthalmological diseases. The fellowships are valued at $US5000 each. Deadline for application is 31 July. Detailed applications, including CV and publication list, should be sent to the Joachim Kuhlmann AIDS Foundation, Bismarckstrasse 55, 45128 Essen, Germany (tel: 0201 87910-87; fax: 0201 87910-99; email: jkfistung@t-online.de).

DR-2000, International Forum on Diabetic Retinopathy

The International Forum on Diabetic Retinopathy will take place on 7–9 September 2000 at the Palazzo Reale, Naples, Italy. Further details: Francesco Bandello, Congress Secretary, MGR Congressi, Via Servito Tullio, 4, 20123 Milano, Italy (tel: 39 02 430071; fax: 39 02 48008471; email: dr2000@mgr.it).

13th Afro-Asian Congress of Ophthalmology

The 12th Afro-Asian Congress of Ophthalmology (Official Congress for the Afro-Asian Council of Ophthalmology) will be held on 11–15 November 2000 in Guangzhou (Canton), China. The theme is “ Advances of ophthalmology and the 21st century”. Further details: Professor Lezheng Wu, Zhongshan Eye Center, SUMS, New Building, Room 919, 54 Xianlie Nan Road, Guangzhou 510060, PR China (tel: +86-20-8760 2402; fax: +86-20-8777 3570; email: lwuicv@gsusms.edu.cn).

Singapore National Eye Centre 10th Anniversary International Congress

The Singapore National Eye Centre 10th Anniversary International Congress will be held in conjunction with 3rd World Eye Surgeons Society International Meeting on 2–4 December 2000 at the Shangri-La Hotel, Singapore. Further details: The Organising Secretariat, 11th Third Hospital Avenue, Singapore 168751 (tel: (65) 2277255; fax: (65) 2277290; internet: www.snce.com.sg).

The Hong Kong Ophthalmological Symposium 00

The Hong Kong Ophthalmological Symposium 00 will be held 4–5 December 2000, in Hong Kong, China. Further information: Miss Vicki Wong, Room 802, 8/F Hong Kong Academy of Medicine, 99 Wong Chuk Hang Road, Aberdeen, Hong Kong (tel: (852) 2761 9128; fax: (852) 2761 0089; email: cohk@netvigator.com).
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