COMMENT

The incidence of globe perforation following pericocular anaesthesia is probably much more than the previously believed 0.1%1 and more cases would be identified with a high index of suspicion and postoperative fundal examination through a contact lens. If the time of the injection it is more likely for the needle to travel through the globe (seen as an entry and exit wound) and as a result the anaesthetic is still injected in the periorbital space, leading to adequate anaesthesia and akinesia. Peribulbar anaesthesia, which was reported as a safer alternative to the retrobulbar injection2 was implicated in all our cases and might not be as safe as was previously believed.

It is easy to point a finger at the person administering the block and attribute the condition to the learning curve especially of the trainee; however, we feel that a few steps might be useful. The risk of ocular perforation may decrease with use of the long 25 gauge (25 mm) needle instead of the longer (37.5 mm) retrobulbar needle. The use of blunt needles has been recommended to prevent injury to the globe.2 Perforation is more likely in eyes with an axial length greater than 26 mm it is a safer option to administer the local anaesthetic in the sub-Tenon’s space. We have found it particularly easier to stay away from the globe by going transconjunctivally rather than by going through the skin. Also it is always suggested that before injecting the needle is moved sideways to ensure that it has not engaged the eyeball. This not only warns us of the possibility of the needle touching the globe but also prevents any injection of anaesthetic in the globe. However, one should not underestimate the importance of adequate training of personnel and suspicion in the immediate postoperative period. But there is always going to be the occasional “uncooperative patient”—a situation where the utmost caution has to be exercised.

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Injury to the globe during pericocular anaesthesia

EDITOR,—We read with great interest the observations of Chen et al1 on the occurrence of inadvertent injury to the globe secondary to peribulbar anaesthesia. We found it particularly relevant because we have recently encountered similar cases, but without serious consequences.

Red-free light in applanation tonometry

EDITOR,—Goldmann’s applanation tonometry is generally performed using cobalt blue filter and fluorescein in order to obtain accurate localisation of the apex of the tear meniscus.1,2 The peak transmission value of the cobalt blue filter BG12 on the Haag-Streit slit lamp 900 BM is 0.80 at 400 nm, whereas that of the red-free filter BG39 is 0.965 at 490 nm. The peak absorption value of fluorescein in dilute aqueous solution at physiological tear pH is also at 490 nm.3 Greater intensity of fluorescein and better visibility of the tear meniscus could therefore, be obtained by the use of red-free filter. We designed a study to compare intracocular pressure (IOP) measurements obtained using red-free light with those taken with the cobalt blue filter.

Fifty six consecutive follow up glaucoma patients attending ophthalmic clinic during February 1998 were the subjects for the study. The order of testing of the two eyes and the order of use of the filters were determined by random permuted block method. After instillation of 4% lignocaine and 0.25% fluorescein with polyvinylpyrrolidone, and with slit lamp illumination at 7.5 V, both eyes were applanated at the same sitting using both cobalt blue and red-free illumination in succession. Three readings were taken for each illumination and the average was used for statistical purpose. The mean value of IOP of 112 eyes obtained using red-free light was 17.19 (SD 5.14) mm Hg whereas using blue light it was 17.17 (6.44) mm Hg. On two tailed paired t test analysis at the 5% level of significance, the difference is not significant.

The red-free filter does not diminish the overall light intensity as much as the blue filter. Consequently, the ocular structures are seen more clearly in the background during the procedure. At the same time the tear menisci are seen brightly fluorescent as a result of both greater overall intensity and more appropriate wavelength of the light. Red-free light applanation tonometry, therefore, achieves optimal visualisation of the tear menisci and accurate estimation of IOP.

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Polymerase chain reaction in the diagnosis of bacterial endophthalmitis

EDITOR,—The paper by Therese et al1 raises several issues which require clarification. The contamination of Taq polymerase by bacterial DNA is now well established in the published press. Taq polymerase is known to be contaminated with low levels of bacterial DNA not originating from either Thermus aquaticus or Escherichia coli and is easily amplified using universal bacterial primers based on ribosomal gene sequences.2 Although this level of contamination is insufficient to give a

detectable amplification product after just one round of polymerase chain reaction (PCR), it is easily detected following nested amplification. The specific Taq used in the study (AmpliTaq DNA polymerase) is well known for being unsuitable for bacterial PCR using primers to enzymes such that the company itself (Perkin-Elmer) has more recently introduced a “low DNA” Taq (AmpliTaq LD) in order to reduce the size of the problem. The reduced level of contamination in this Taq is still sufficient to yield positive “negative controls” after two rounds of PCR with eubacterial primers. Therefore, before first round amplification, it is of paramount importance to pretreat the Taq polymerase with the appropriate enzymes (unpublished observations), and to include the first round negative control as a test sample in the nested PCR reaction. The levels of DNA contamination are easily detectable at the sensitivity (40 fg) for the second round PCR reported by this group of authors and neither in the text nor in the figures is there any mention of a first round negative control as a test sample in the nested PCR reaction. The results submitted by Professor Madhavan’s group reflect PCR in the absence of adequate negative controls and are, therefore, meaningless.

It is also well known that 22–43% of anterior chamber samples are positive immediately after cataract surgery from patients that subsequently do not develop endophthalmitis. 1-3 Not only has no attempt been made to provide clinical data about the cases with endophthalmitis but also no information is provided about whether these samples were positive at the time of the sample collection. The high sensitivity of PCR and the ability to detect non-viable organisms, a higher yield of positive results is only to be expected. But, for example, a positive PCR result in the absence of a positive culture result a few days postoperatively is not necessarily evidence of infection sufficient to cause endophthalmitis. Also, in the absence of speciation no information is obtained regarding the virulence of the organism. All “PCR” based techniques for investigation of cases of presumed bacterial endophthalmitis should, therefore, be accompanied by clinical data to allow readers to judge for themselves whether the results obtained are truly applicable to the clinical setting.

The contamination-free method of collection of samples is always critical but especially so if the PCR technique involves PCR targeting enzymes. No details of the preoperative/presampling preparation method are provided and no information is given as to whether the procedure was standardised and how many surgeons were involved in the collection process. The only sensitivity data reported are from extracted dilutions of DNA and not from live organisms. As the ability to extract DNA from intact cells is an integral step in any DNA amplification method this is another major flaw in this study. It is not surprising that Madhavan et al had little success in culturing P. acnes since the technique used was incorrect: cultures should be maintained for up to 14 days instead of only 10.

The statement that “PCR showed 100% correlation with smear and culture results” is erroneous and misleading as this can not be verified in the absence of speciation techniques to identify the PCR product/s amplified. The final paragraph begins “Further studies are needed to identify the specific eubacterial strains . . .”. The presence of different strains is irrelevant as treatment is identical. We suggest Madhavan’s group first attempt to identify the bacterial species present. Any new diagnostic test should be evaluated in terms of its clinical specificity as well as sensitivity: Therese et al have not addressed the specificity of PCR in the detection of disease so no comments on its clinical use are warranted. Their suggestion that “Hence, the anterior chamber tap could be the method of choice in the diagnosis of endophthalmitis when a highly sensitive technique such as PCR is applied” has no basis and is likely to lead to mismanagement. The anterior chamber is the site of entry of organisms in the majority of cases. The presence of a positive PCR does not always correlate with established infection and the presence of a variety of bacteria from the patients own eyelid flora is only to be expected. Also, mixed infections have been reported in the published press.

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Reply

EYTON.—We are extremely thankful to Professor Madhavan for his comments on our article and would like to respond to the comments and queries raised by them.

Regarding the point on the contamination of Taq polymerase with bacterial DNA and the adequacy of negative controls, we certainly were fully aware of this problem when this project was undertaken and therefore sufficient care was taken in providing proper and adequate controls in each and every step in the PCR which we feel was quite evident in the article.

We included two negative controls in each of the amplifications (as mentioned in the article)—a reagent control and a sample extraction control. The sample extraction control consisted of sterile Milli Q water subjected to the same extraction procedures as the specimens. The second round controls consisted of a reagent control (only reagents used for the PCR reaction, no sample extraction control, where 1 µl of amplified product from the first round extraction control was added. Only when both the reagent and sample extraction controls were negative were the results of specimens accepted.

Whenever negative controls indicated contamination the results were rejected.

We can authenticly state that the AmpliTaq DNA polymerase (Perkin-Elmer) used in our study did not contain any detectable amount of bacterial DNA, under our PCR conditions. For meaningful interpretations the results of Odhavari et al of the PCR results, we have indeed mentioned in the text (under paragraph “PCR using universal primers” p 1079, line 10), 1 µl of amplified product of the first round was used for the second round. It should be understood that it also included the negative controls. Therefore, we submit that adequate negative controls were used along with each reaction. Another observation which strongly indicated that the positive findings of the bacterial remnants was that a significant number of clinical specimens were negative.

Regarding their comments on the clinical data provided on endophthalmitis cases included in our study and their objection to our statement that anterior chamber tap (AC tap) is the method of choice in the diagnosis of bacterial endophthalmitis when PCR is applied, we need to state the following: we believe the clinical data that PCRs in cases of presumed bacterial endophthalmitis (PCR or PCR in cases of delayed endophthalmitis) as suggested by Odhavari et al was beyond the scope of this study, because most of our postoperative endophthalmitis cases were referred to our hospital several weeks/ months after surgery due to the bacterial agents which might have normally entered the anterior chamber during the immediate postoperative period could not have interfered with the PCR results of AC tap unless they themselves were the causative agents of endophthalmitis, when the bacterial agent automatically became true positive. Therefore, our conclusion that PCR on AC tap could be the method of choice as a diagnostic technique in cases of suspected bacterial endophthalmitis is correct.

We included clinically evident post traumatic and endogenous infective endophthalmitis cases in addition to postoperative ones to highlight the diagnostic value of PCR on AC tap in all these three clinical groups since the earlier study of Hykkin et al was based only on vitreous aspirates from delayed postoperative endophthalmitis cases. In response to their statement “In the absence of speciation, no information is obtained regarding the virulence of the organisms”, we wish to state that as our study was aimed only at evaluating the diagnostic value of PCR in bacterial endophthalmitis, speciation and virulence of bacteria with reference to the clinical data were irrelevant and did not need to be included in our study.

Regarding preoperative/presampling preparation method used for collection of intraocular specimens included in our study, they were collected by surgeons who used well established preoperative and presampling preparation methods for such collections, but for PCR or other purposes. Therefore, our statement that the specimens were collected “aseptically”, we felt, did not need further elaboration into details of these established procedures.

The PCR sensitivity data included in our article were only for DNA extracted from living strains of Staphylococcus epidermidis and Propionibacterium acnes. We believe it was understood in the statement we made.

In response to their statement that cultures for P. acnes should be “maintained for up to 14” days instead of only 10, we wish to state that in our several years of experience, P. acnes, if viable, has been isolated within 5–6 days of the embryation period and cultured in a-
tation even up to 45 days in culture media did not result in isolation of this bacterium. As we did not find it useful to incubate the inoculated media any further than 10 days, the media were discarded if there was no growth. But we certainly appreciate the suggestion of Okhravi et al in this procedure.

Our statement that nested PCR showed “100% correlation with” bacteriologically (smear and culture) positive specimens was made to emphasise the distinctive specificity of the PCR method to detect eubacterial genome and no attempts have been made to speculate the amplified product to correlate with any isolated bacterium. We have, however, proposed “to identify specific bacterial strains in the specimen positive for eubacterial genome but negative for P. acnes genome”. But at the same time, Okhravi et al make a contradictory statement that “the presence of different strains is irrelevant, as treatment is identical”. Identity of the bacterium, we feel, is useful to help clinicians to decide on the method of treatment.

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Effect of amblyopia on employment prospects

EDITOR.—There has been much debate recently on the effectiveness of preschool vision screening.1 One conclusion of the recent NHS review report on this subject was that there was inadequate understanding of the disability attributable to the three target conditions: amblyopia, refractive errors, and squints. This has aroused much controversy in the field of paediatric ophthalmology.

We felt it would be useful to collate the visual standards required to enter certain occupations. These data were obtained from the 1997 Book of Vision,2 the 1997 Optometrists’ Handbook,3 and the Office of the Rail Regulator.4

We found a job applicant with defective vision in just one eye would be excluded from a large range of occupations.

BOOK REVIEWS

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This book aims to be a practical guide to the diagnosis and management of all ocular emergencies during the critical first 48 hour period. This is quite a tall order but it is achieved very satisfactorily.

The book opens by identifying that true ocular emergencies requiring immediate attention are rare and that most emergencies give adequate time for evaluation and unhurried decision making which is a reassuring start especially for the novice or the non-ophthalmic accident and emergency trainee.

Each condition is dealt with in a sensibly ordered fashion with a brief description of the problem then a step by step diagnostic and management plan.

The order of the book is interesting in that it is anatomically ordered; injuries and non-traumatic emergencies are dealt on a side by side basis. The chapter on corneoscleral lacerations and ruptures is next to infections of the conjunctiva and keratitis; and sudden non-traumatic visual loss follows traumatic maculopathy. This makes the continuum of orbital, anterior, and posterior segment trauma difficult to understand and therefore the assessment of the patient less clear. However, this does not seem to detract significantly from the text which comprehensively covers most areas with the emphasis on the practical side of diagnosis and treatment of ocular emergencies.

There is a useful section on the preparation of antibiotics for ocular use (drops, subconjunctival, and intravitreal use), diagrams of suture placement, and step by step diagnostic and management guides. There is a short section on the management of paediatric ocular emergencies which may prove useful for those not dealing with children on a day to day basis.

Details on imaging techniques are useful in identifying which method may be best, not only for the condition but also with regard to patient cooperation. Decisions on type of imaging in this country may be based on the availability of different techniques in various hospitals rather than on the optimum method. The section on epidemiology of orbital trauma is excellent providing a short overview of the current situation and for the medicolegally minded there is a comprehensive guide to various methods of evaluating visual disability.

Overall, this book sets out what it plans to do and works well both as a text for general reading as well as a reference guide to those working in the front line of ophthalmology.

C J MACREW


Immunological similarities between the skin and the eye lead to various disorders which may involve both organs. Along with allergic disorders these are the ocular mucocutaneous syndromes that often present a number of diagnostic but also therapeutic problems. This book has succeeded in presenting important basic and clinical knowledge for a better understanding of these disorders. One of the main goals of the book is to understand similarities and dissimilarities between both systems. Written by dermatologists, immunologists, and ophthalmologists, the 19 chapters focus in the first part on general aspects of both organs, like immunophysiology of the skin, immunological privilege of the eye, and anatomy of the skin and conjunctiva. The second part addresses the immunology and therapy of ocular cicatricial pemphigoid (OCP), but also diseases that mimic OCP, and the Stevens–Johnson syndrome. The book is mostly well illustrated, the chapters generally contain the most recent important literature. The subject index makes working easier.

In conclusion, the book presents the most updated information in the field of these often misdiagnosed or mistreated disorders including an overview of the problems associated with oculodermal disorders and probable solutions.
Blindness in children
The latest issue of the Community Eye Health (no 27) discusses blindness in children, with an editorial by Allen Foster, medical director of the Christoffel Blindness mission and articles on blind schools, problems of examining children with visual loss, optical services, and integrated education. 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 6910; fax: (+44) 171 250 3207; email: eye-resource@ucl.ac.uk) Annual subscription £25. Free to workers in developing countries.

Residents’ Foreign Exchange Programme
Any resident interested in spending a period of up to one month in departments of ophthalmology in Germany, Denmark, France, Austria, or Portugal should apply to: Mr Robert Acheson, Correspondence, Book reviews, Notices, Correction
MANFRED ZIERHUT
NOTICES

Office of Continuing Medical Education
The 16th Annual Wilmer Institute’s Current Concepts in Ophthalmology will be held on 14–19 March 1999 at the Manoel Vail Lodge, Vail, Colorado, USA. Further details: Program Coordinator, Johns Hopkins Medical Institutions, Office of Continuing Medical Education, Turner 27/20 Rutland Avenue, Baltimore, Maryland, MD 21205, USA. (Tel: (410) 955-2959; fax: (410) 614-8613; email: cmenet@som.adm.jhu.edu)

Ophthalmological Clinic, University of Creteil
An international symposium on the macula will be held on 26–27 March 1999 at the Ophthalmological Clinic, University of Creteil. Further details: Professor G Soubrane, Chef de Service, Clinique Ophthalmique Universitaire de Creteil, Centre Hospitalier Intercommunal, Avenue de Verdun, 94010 Creteil, France. Fax: 01 45 17 52 27.

Leonhard Klein Award 1999
The Leonhard Klein Award 1999, valued at DM30 000, will be given for innovative, scientific works in the field of development and application of microsurgical instruments and microsurgical operating techniques. It can be conferred on an individual as well as a group of researchers. The work must be submitted in either English or German by 31 March 1999. Further details: Stiftungsvorstand für die Deutsche Wissenschaft eV, Herr Peter Beck, Postfach 16 44 60, D-45224 Essen, Germany.

XVIII Tuebingen Detachment course: Retinal and Vitreous Surgery
The XVIII Tuebingen Detachment course: Retinal and Vitreous Surgery will be held 8–9 April 1999 at the lecture hall “Kupferbau” of the University, Gmelinstraße 8, 72076 Tuebingen, Germany. Further details: Congress-Secretariat (T), Professor I Kreissig, Augenheilkunde III, Schleichstraße 12, D-72076 Tuebingen, Germany. (Fax: +49-7071-293746; email: ingrid.kreissig@uni-tuebingen.de)

ARVO 1999 annual meeting
The 1999 annual meeting of the Association for Research in Vision and Ophthalmology will take place on 9–14 May 1999 in Fort Lauderdale Convention Center, Fort Lauderdale, Florida. Further details: ARVO, 9650 Rockville Pike, Bethesda, MD 20814-3998, USA. (Tel: (301) 571-1844; fax: (301) 571-8311.)

12th Annual Meeting of German Ophthalmic Surgeons
The 12th annual meeting of German Ophthalmic Surgeons will be held on 10–13 June 1999 at the Meistersingerhalle, Nürnberg, Germany. Further details: MCN Medizinische Congress-Organisation Nürnberg GmbH, Weißenstrasse 6, D-90419 Nürnberg, Germany. (Tel: ++49-911-3931621; fax: ++49-911-3931620; email: doerflinger@mcn-nuernberg.de)

XII Congress European Society of Ophthalmology
The XII Congress European Society of Ophthalmology will be held in Stockholm, Sweden on 27 June–1 July 1999. Further details: Congress (Sweden) AB, PO Box 5819, S-114 86 Stockholm, Sweden. (Tel: +46 8 459 66 00; fax: +46 8 661 91 25; email: soe@congress.se; http://www.congress.com/soe/)

Vision ’99: International Conference on Low Vision and Vision Rehabilitation
The International Conference on Low Vision and Vision Rehabilitation will be held on 12–16 July 1999 at the Waldorf-Astoria Hotel, New York City, New York. Further details: Lighthouse International, 111 East 59th Street, New York, NY 10022-1202, USA. (Tel: (212) 821-9482; fax: (212) 821-9705; email: vision99@lighthouse.org)

4th Meeting of the European Neuro-Ophthalmology Society
The 4th meeting of the European Neuro-Ophthalmology Society will be held on 29 August–2 September 1999 in Jerusalem, Israel. Further details: Secretariat, 4th Meeting of the European Neuro-Ophthalmology Society, PO Box 50006, Tel Aviv, Israel. (Tel: 972-3-514000; fax: 972-3-5175674/972-3-5140077; email: Euno99@kenes.com)

International Agency for the Prevention of Blindness
The sixth general assembly of the International Agency for the Prevention of Blindness will be held on 5–6 September 1999 at the Conference Centre, Beijing Friendship Hotel, Beijing, People’s Republic of China. The theme is “The right to sight”. Further details: IAPB Secretariat, LV Prasad Eye Institute, LV Prasad Marg, Banjara Hills, Hyderabad 500 034, India. (Tel: 910-40-213589; fax: 910-40-248271; email: IAPB@lveyec.stph.net)

Ophthalmological Clinic, University of Creteil
An international symposium on the macula will be held on 1–2 October 1999 at the Ophthalmological Clinic, University of Creteil. Further details: Professor G Soubrane, Chef de Service, Clinique Ophthalmique Universitaire de Creteil, Centre Hospitalier Intercommunal, 40 Avenue de Verdun, 94010 Creteil, France. Fax: 01 45 17 52 27.

Jules François Prize
The 2000 Jules François Prize of $100 000 for scientific research in ophthalmology will be awarded to a young scientist who has made an important contribution to ophthalmology. All topics in the field of fundamental and/or clinical research in ophthalmology will be considered. The application should be sent jointly with a curriculum vitae, the list of all publications, and three copies of the candidate’s 10 most relevant publications to Jules François Foundation Secretary, Professor Dr M Hanssens, Dienst Oogheelkunde, de Pintael 185, B-9000 Gent, Belgium. Deadline for applications 31 December 1999.

Correction
One of the authors of a paper that appeared in the BJO last year was unfortunately left out of the list of authors. The paper was in the July issue of the journal (1998;82:816–20); and the author is Sherif M El-Harazi, who is at the Department of Ophthalmology and Visual Science, University of Texas Medical School at Houston, Texas.