

## MAILBOX

**Refractive, keratometric, and topographic determination of astigmatic axis after penetrating keratoplasty**

EDITOR,—We read with interest the article by Sarhan *et al*<sup>1</sup> on the effect of disagreement between refractive, keratometric, and topographic determination of astigmatic axis on suture removal after penetrating keratoplasty.

The authors make some fundamental errors in their use of vectors for the calculation of mean astigmatism and have failed to refer to the dependence of astigmatism on the overall refractive power. As clearly discussed by several authors,<sup>2-4</sup> it is inappropriate to analyse astigmatism without analysing the overall change in refractive power. The authors state that the two groups (agreement and disagreement) were comparable before suture removal in the preoperative vector of astigmatism but do not present the mean presuture removal vector. The authors appear to calculate a mean of the scalar component of astigmatism. Vectors have both direction and magnitude and cannot be averaged in this way; doing so leads to erroneous and incorrect conclusions. It is also of concern that no post-suture removal data or refractive data are presented.

The authors also calculate the change in astigmatism using a method<sup>5</sup> that relies on obtaining a square root—although no mention is made of which root they have used.<sup>6</sup> As with the presuture removal data, in the calculation of the mean change in the vector of astigmatism the directional component of the vector (for example, the ordinate axis of Fig 1) is disregarded with a *t* test on the scalar. There are several published methods for analysing astigmatism,<sup>7,8</sup> which the authors appear to have overlooked. The authors need to determine to what extent the degree and direction of change in astigmatism was in the direction of the sutures removed<sup>9</sup> and how this differed between the two groups. The presence of pseudophakia is also relevant, since there may be an influence from non-corneal astigmatism. A table including details of each subject's refraction before and after suture removal would have been illuminating.

Changes in refraction, keratometry, and topography might occur even without suture removal as part of the natural evolution of the cornea after penetrating keratoplasty so a control group is required. For example, the two groups might not have been similarly stable over time; in particular, we need to know whether the astigmatism within each group had been changing at the same or different rates.

The management of post-keratoplasty astigmatism remains an important subject and further work is needed.

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- 1 Sarhan ARS, Dua HS, Beach M. Effect of disagreement between refractive, keratometric, and topographic determination of astigmatic axis on suture removal after penetrating keratoplasty. *Br J Ophthalmol* 2000;84:837-41.
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**Reply**

EDITOR,—Kaye and colleagues make some valid though theoretical comments regarding vector analysis in the evaluation of post-keratoplasty astigmatism. We did use a software program for vector analysis based on the Jaffe and Clayman<sup>1</sup> method of analysis of the vectors. Several formulas<sup>2-4</sup> have been adopted to determine surgically induced astigmatism by vector analysis and further modifications have been carried out.<sup>5-7</sup> The fundamental advantage of the Jaffe formula is its inherent consistency between refractive and keratometric changes and its sound mathematical basis.<sup>4</sup>

The authors of the letter make the valid comment that natural changes in refraction, keratometry, and topography might occur as part of the natural evolution of the cornea after penetrating keratoplasty. This is correct but again a very theoretical consideration. In practice, in the presence of significant post-keratoplasty astigmatism, most corneal surgeons will not wait and hope for natural progression to obviate the error. Intervention in the form of suture removal is undertaken between 4-6 months post-graft in order to influence the existing astigmatism. Such intervention does indeed influence the astigmatism, usually favourably. Rate of change of astigmatism, in the first 6 months does not influence the decision to remove sutures.

The simple observation reported in this paper<sup>8</sup> was that, in patients who have undergone penetrating keratoplasty, the axis of astigmatism as determined by refraction, keratometry, and topography does not always coincide. This observation is undisputed. The simple message of the paper was that when these three measures do not coincide, removal of sutures as indicated by topography (which is the standard practice) does not always give the desired result as when the three measures do coincide. In the absence of conformity of the three measures, other clues such as inspection of the sutures and presence of striae and stress lines should also be considered before deciding which suture to remove.

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- 1 Jaffe NS, Clayman HM. The pathophysiology of corneal astigmatism after cataract extraction. *Trans Am Acad Ophthalmol Otolaryngol* 1975;79:615-30.
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**Transscleral cyclophotocoagulation in glaucoma after penetrating keratoplasty**

EDITOR,—I read the article by Schlote *et al*<sup>1</sup> with interest. The aim of their study was to determine the safety and effectiveness of transscleral diode laser cyclophotocoagulation (TDLC) in post-inflammatory eyes with refractory glaucoma. In addition, the authors have rightly pointed out that management of inflammatory glaucoma is still a dilemma as many of the antiglaucoma drugs are either contraindicated or ineffective in such eyes. Further, some surgical procedures may activate the inflammatory diseases. I congratulate Schlote *et al* for highlighting the efficacy of TDLC in inflammatory glaucoma. In this context I would like to share our experience in one group of such eyes, "post-PK glaucoma."

Glaucoma following penetrating keratoplasty continues to be a serious problem because of the frequency of its occurrence, its recalcitrant nature, and the risk of further damaging an already compromised anterior segment. We found in our study of eight eyes with uncontrolled post-PK glaucoma (Table 1) that all the eight eyes responded to the therapy and the mean IOP was 17.5±1.06 at the end of 24 weeks post-TDLC where the preoperative average intraocular pressure was 32.5 (SD 3.66) mm Hg. All but one patient were off systemic antiglaucoma therapy at 6 months. However, all the patients were taking topical timolol maleate 0.5% twice daily. The graft clarity was improved by 1+ in four eyes and 2+ in one.<sup>2</sup> In three eyes the graft clarity was worsened. Visual acuity was static in six eyes and improved in one. In one eye the visual acuity was reduced from 3/60 to counting fingers. On the basis of the reports by Schlote *et al*<sup>1</sup> in 2000 and Spencer and Vernon<sup>3</sup> in 1999, we believe that TDLC is an alternative to treat post-PK glaucoma.

However, considering the non-improvement of visual acuity, worsening of the graft clarity in 25% of eyes, and repeat therapy in 25% of eyes, our question remained unanswered about the real efficacy of the procedure. It is, therefore, essential to know from the authors about the efficacy of TDLC in post-PK glaucoma. Once again I congratulate the authors for bringing up this important issue.<sup>1,2</sup>

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- 1 Schlote T, Derse M, Zierhut M. Transscleral diode laser cyclophotocoagulation for the treatment of refractory glaucoma secondary to inflammatory eye diseases. *Br J Ophthalmol* 2000;84:999-1003.
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### Argon laser and trichiasis: a helpful tip

EDITOR.—Trichiasis is a posterior misdirection of eyelashes. Owing to constant corneal irritation it can give rise to discomfort, recurrent infection, corneal ulceration, and pannus formation. Several modalities of treatment exist which include epilation, electrolysis, cryotherapy, and argon laser thermoablation.<sup>1,2</sup>

Argon laser offers the advantage of being a relatively simple, virtually painless method of destroying the eyelash follicle. It is especially useful when there is a need to limit contiguous tissue inflammation and destruction—for example, ocular pemphigoid.<sup>3</sup> Argon laser can be precisely applied to the follicle with or without topical anaesthesia. A beam size of 50 µm, for a duration of 0.1 second and energy levels of 400–500 mW is normally used in our clinic.

Thermoablation depends on the absorption of argon laser by pigment. In our experience, patients with chronic trichiasis, who have undergone repeated removal of eyelashes with other available methods, have pale hypopigmented lashes which do not absorb sufficient laser energy. This makes it difficult and sometimes impossible to get a result in spite of increasing the energy levels. Recently, we have used a blue skin marker pen to mark the base of the offending eyelash with the result that argon laser is better absorbed by the blue pigment. Once there is initial uptake subsequent shots down the lash root can be easily completed.

In conclusion, we have found the simple and inexpensive technique of marking eyelash bases useful in increasing the efficacy of argon laser photoepilation.

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- 1 Bartley GB, Lowry JC. Argon laser treatment of trichiasis. *Am J Ophthalmol* 1992;113:71–4.
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### Optokinetic nystagmus in patients with central field defects

EDITOR.—We read with interest the article by Valmaggia *et al*<sup>1</sup> who studied optokinetic nystagmus (OKN) in patients with macular degeneration. They noted abnormalities of OKN gain only in patients with large central scotomas. Therefore, an intact macula seems not to be necessary for the generation of OKN. This implicitly suggests an important role of the peripheral retina in eliciting an OKN. In this context, it is interesting to note that we observed an inversed OKN in some patients with defects of the central visual field.<sup>2</sup> An inversed OKN is an OKN with fast phases in the direction opposite to the stimulus. The eyes in which an inversed OKN was provoked more easily or at lower stimulus velocities had the largest central field defects. It was a prerequisite to elicit an inversed OKN that the attention was actively directed to the central field defect itself, but could also be influenced by a remarkable property of the more peripheral retina to induce an OKN in the inversed direction, counteracting the

OKN in the classic direction. In this central-peripheral interaction, we proposed an important role for spatial-selective attention.<sup>3</sup> It would be very interesting to find a method to monitor direction of attention simultaneously with OKN.

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- 1 Valmaggia C, Charlier J, Gottlob I. Optokinetic nystagmus in patients with central scotomas in age related macular degeneration. *Br J Ophthalmol* 2001;85:169–72.
- 2 Crevits L, van Vliet AGM. Optokinetic nystagmus in patients with defects of the central visual field. *Eur Neurol* 1986;25:454–7.
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## BOOK REVIEWS

**Unfavorable Results of Eyelid and Lacrimal Surgery: Prevention and Management.** Ed by Joseph A Mauriello. Pp 644; £145. Oxford: Butterworth-Heinemann, 2000. ISBN 0750670169.

Dr Mauriello has relied on his vast clinical experience to put together an authoritative treatise on the prevention and management of problems in eyelid and lacrimal surgery. Each chapter in the three large sections—esthetic eyelid and midface surgery, functional eyelid surgery, and lacrimal surgery—has contributions by one set of authors and is preceded by introductory comments from the editor. The authors describe in detail their approaches to the very specific complications associated with particular surgical interventions.

The uniqueness of the text lies in its layout, as Dr Mauriello has enlisted the assistance of colleagues in various subspecialties of ophthalmic plastic surgery, head and neck surgery, and dermatological surgery to offer “expert” comments on their experiences, approaches, and suggestions for dealing with these very complex problems. Some overlap within each chapter is deliberately intended to bring a diverse perspective to these topics. A concluding editorial nicely summarises the expert commentary from each chapter.

Although this text can be read and enjoyed by a wide audience of medical practitioners, it will be most appreciated by ophthalmologists, ophthalmic plastic surgeons, plastic surgeons, and others performing surgery in the periocular region. The eyelid surgery sections are particularly timely and well outlined, covering essential topics such as endoscopic forehead elevation, laser resurfacing, and congenital blepharoptosis surgery. A wide spectrum of lacrimal disorders from infancy to adulthood are also described, including the management of lacrimal sac tumours. Relevant histopathology, neuroimaging, and schematic diagrams serve to emphasise surgical or anatomical principles where necessary. The scope of the text may be somewhat advanced for residents in the early stages of their training, but it does provide some indication of the breadth of knowledge and surgical techniques that need to be mastered in order to optimise functional and aesthetic surgical results. The intraoperative photographs, with meticulous attention to

detail, provide careful instruction as to how to carry out surgical techniques with maximum success yet minimal complications. For surgeons embarking on a career in ophthalmic plastic surgery, or for established surgeons interested in optimising surgical results, this text is a welcome addition to any collection.

DAN DEANGELIS

**Neuro-ophthalmology Review Manual.** 5th ed. By Lanning B Kline, Frank J Bajands. Pp 288; £37.95. NJ: Slack Incorporated, 2000. ISBN1556424701.

The *Neuro-ophthalmology Review Manual* is the 5th edition of a well established favourite. The intention, as with previous editions, is to provide a readable compendium of “no nonsense” neuro-ophthalmology for neurologists, neurosurgeons, and ophthalmologists. The first edition of the book was envisaged as a coaching manual for the needs of the US Board examinations, but subsequent editions have been expanded in the hope of providing, in addition, a practical guide to the management of patients in the clinic and on the wards.

Apart from the senior author (Lanning B Kline) there are six contributing authors. The text of 280 pages is divided into 20 chapters, two of which on the phacomatoses and disturbances of higher visual function are completely new. The other chapters cover the full range of neuro-ophthalmic subject matter, including the major problems of disorders of eye movement, visual fields, pupils, and the optic disc. There are also chapters on the trigeminal nerve, the facial nerve, eyelid disorders, headache, carotid artery disease, and hysteria and malingering. The chapters are not formally referenced, but all have a useful bibliography of books, chapters, and original articles. The information is in note format, with line diagrams and a few tables.

Generally speaking an enormous amount of information is condensed into each chapter, but is readily accessible because of the layout. Mostly the information is clinically useful, with an emphasis on lists of differential diagnoses and pointers towards the diagnosis of individual conditions. The emphasis is very heavily on clinical diagnosis, with little detail on laboratory tests, imaging, etc, and virtually none on management. For this reason on occasion some of the information appears rather arcane, and seems to predate the modern imaging era.

Examination candidates will find the dogmatic approach in some chapters—for example, “The six syndromes of the sixth nerve” or “The five syndromes of the fourth nerve”—very helpful in evolving a rigorous examination technique for topical diagnosis, as well as a useful way of retaining a lot of information. On the other hand any practising ophthalmologist would find it useful to be reminded of the essentials of, for example, disorders of the facial nerve or of higher visual function when confronted with such a patient in the clinic.

All in all this book is a mine of useful information. It is comprehensive and covers the vast majority of practical neuro-ophthalmic scenarios, which may confront the ophthalmologist. It can be recommended as a revision aid for the Part 3 membership exam. It would be a useful quick reference book for both the ophthalmic casualty and the neuro-ophthalmology clinic.

JOHN S ELSTON

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## NOTICES

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### National prevention of blindness programmes and Vision 2020

The latest issue of *Community Eye Health* (36) discusses national prevention of blindness programmes. 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) (0) 20-7608 6909/6910/6923; fax: (+44) (0) 7250 3207; email: [eyeresource@ucl.ac.uk](mailto:eyeresource@ucl.ac.uk)) Annual subscription £25. Free to workers in developing countries.

### Second Sight

Second Sight, a UK based charity whose aims are to eliminate the backlog of cataract blind in India by the year 2020 and to establish strong links between Indian and British ophthalmologists, will be sending volunteer surgeons to India early in 2001. Details can be found at the charity website at [www.secondsight.org.uk](http://www.secondsight.org.uk) or by contacting Dr Lucy Mathen ([lucymathen@yahoo.com](mailto:lucymathen@yahoo.com)).

### 2nd Interdisciplinary Symposium on the Treatment of Autoimmune Disorders 2001

The 2nd Interdisciplinary Symposium on the Treatment of Autoimmune Disorders 2001 will take place on 7-9 June 2001 at the University Hospital, University of Kiel, Kiel, Germany. Further details: Prof Dr Med Michael Sticherling, Department of Dermatology, University of Kiel, Schittenhelmstrasse 7, D-24105 Kiel, Germany (tel: +49-431 597 1512; fax: +49-431 597 1611; email: [msticherling@dermatology.uni-kiel.de](mailto:msticherling@dermatology.uni-kiel.de)).

### European Intensive Program of Disease and Imaging of the Fundus

The European Intensive Program of Disease and Imaging of the Fundus under the auspices of the European Program Socrates will be held 2-12 July 2001 at the Clinique Ophtalmologique Universitaire, 40 avenue de Verdun, 94010 Créteil, France. Further details: Béatrice Rousseau (tel: (33 1) 45 17 52 22; fax: (33 1) 45 17 52 66).

### American Institute of Ultrasound in Medicine—Millennium Ultrasound Course Series

A course entitled "Obstetrical and Gynecological Ultrasound" will be held in New York City, NY, on 24-26 August 2001. Further

details: Stacey Bessling, Public Relations Coordinator, AIUM, 14750 Sweitzer Lane, Suite 100, Laurel, MD 20707-5906, USA (tel: 301-498-4100; email: [sbessling@aium.org](mailto:sbessling@aium.org)).

### 14th World Congress of the International Society for Laser Surgery and Medicine

The 14th World Congress of the International Society for Laser Surgery and Medicine is to be held on the 27-30 August 2001 at Sri Ramachandra Medical College and University Hospital, Chennai, India. The American Society of Lasers in Medicine and Surgery has indicated that it will designate the 14th World Congress of ISLSM as its society's co-sponsoring meeting. A pre-conference course and separate sessions in ophthalmology will be held as a part of this international meeting. Further details: Dr B Krishna Rau, President, 14th World Congress of the International Society for Laser Surgery and Medicine, Department of Surgery, D2 Ward, Sri Ramachandra Medical College and Research Institute, Porur, Chennai - 600 116, India (tel: 91-44-4765856, 4768027-28, 8527776, 8594804; fax: 91-44-8594578, 4767008; email: [krishnar@giasmd01.vsnl.net.in](mailto:krishnar@giasmd01.vsnl.net.in) and website: [www.medindia.net/islsm2001](http://www.medindia.net/islsm2001)).

### 31st Cambridge Ophthalmological Symposium

The 31st Cambridge Ophthalmological Symposium will be held 3-5 September 2001 at St John's College Cambridge. The subject is Retinal Detachment. Further details: COS Secretariat, Cambridge Conferences, The Lawn, 33 Church Street, Great Shelford, Cambridge CB2 5EL, UK (tel: 01223 847464; fax: 01223 847465; email: [b.ashworth@easynet.co.uk](mailto:b.ashworth@easynet.co.uk)).

### 1st Asia Pacific Forum on Quality Improvement in Health Care

The 1st Asia Pacific Forum on Quality Improvement in Health Care will be held from 19-21 September 2001 in Sydney, Australia. Presented by the BMJ Publishing Group (London, UK) and Institute for Healthcare Improvement (Boston, USA), with the support of the Commonwealth Department of Health and Aged Care (Australia), Safety and Quality Council (Australia), NSW Health (Australia) and Ministry of Health (New Zealand). Further details: [quality@bma.org.uk](mailto:quality@bma.org.uk); fax +44 (0) 7383 6869.

### 41st St Andrew's Day Festival Symposium on Therapeutics

The 41st St Andrew's Day Festival Symposium on Therapeutics will be held on 6-7

December 2001 at the Royal College of Physicians of Edinburgh. Further details: Ms Eileen Strawn, Symposium Co-ordinator (tel: 0131 225 7324; fax: 0131 220 4393; email: [e.strawn@rcpe.ac.uk](mailto:e.strawn@rcpe.ac.uk); website: [www.rcpe.ac.uk](http://www.rcpe.ac.uk)).

### 4th International Conference on the Adjuvant Therapy of Malignant Melanoma

The 4th International Conference on the adjuvant therapy of malignant melanoma will be held at The Royal College of Physicians, London on 15-16 March 2002. Further details: Conference Secretariat, CCI Ltd, 2 Palmerston Court, Palmerston Way, London SW8 4AJ, UK (tel: + 44 (0) 20 7720 0600; fax: + 44 (0) 20 7720 7177; email: [melanoma@confcomm.co.uk](mailto:melanoma@confcomm.co.uk); website: [www.confcomm.co.uk/Melanoma](http://www.confcomm.co.uk/Melanoma)).

### XXIXth International Congress of Ophthalmology

The XXIXth International Congress of Ophthalmology will be held on 21-25 April 2002 in Sydney, Australia. Further details: Congress Secretariat, C/- ICMS Australia Pty Ltd, GPO Box 2609, Sydney, NSW 2001, Australia (tel: +61 2 9241 1478; fax: +61 2 9251 3552; email: [ophthal@icmsaust.com.au](mailto:ophthal@icmsaust.com.au); website: [www.ophthalmology.aust.com](http://www.ophthalmology.aust.com)).

### International Society for Behçet's Disease

The International Society for Behçet's Disease was inaugurated at the 9th International Congress on Behçet's Disease. Professor Shigeaki Ohno represents the ophthalmology division (Department of Ophthalmology and Visual Sciences, Hokkaido University Graduate School of Medicine, Sapporo, Japan: tel: +81-11-716-1161 (ext 5944); fax +81-11-736-0952; email: [sohno@med.hokudai.ac.jp](mailto:sohno@med.hokudai.ac.jp)). The 10th International Congress on Behçet's Disease will be held in Berlin 27-29 June 2002. Further details: Professor Ch Zouboulis (email: [zoubbere@zedat.fu-berlin.de](mailto:zoubbere@zedat.fu-berlin.de)).

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## CORRECTION

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A mistake occurred in a letter to the editor by Badenoch *et al* published in the April issue of *BJO* (2001;85:502-3). In the last sentence of the third paragraph under the heading "Case report" the hyphal diameter is given as 4-6 mm; this should be 4-6  $\mu$ m.