Further pathophysiological insights into age related macular degeneration

EDITOR,—We read with great interest the excellent editorial by Ciulla,1 which describes pathophysiological paradigms for age related macular degeneration (ARMD) and the development of choroidal neovascular membranes (CNVM). We were particularly pleased to note that Ciulla considered that “whatever the initial stimulus for CNVM formation, it is clear that angiogenic growth factors are ultimately involved.” Furthermore, he observed that primary vascular changes in the choroid may also be responsible.

In light of these observations, we have hypothesised a relation between abnormal vascularisation (angiogenesis), haemorheological factors, and endothelial dysfunction in patients with ARM. We felt that abnormalities in the systemic and choroidal vasculature, may relate to the release of angiogenic factors and subsequent proliferation of choriocapillaris through the Bruch’s membrane in susceptible individuals. To investigate this hypothesis further, we recently reported a cross sectional study2 of patients presenting with ARM and measured plasma levels of VEGF (an index of angiogenesis), haemorheological factors (fibrinogen, plasma viscosity), and von Willebrand factor (an index of endothelial damage/dysfunction) from these patients. Median plasma VEGF (225 ± 195 pg/ml, p = 0.0010) and mean von Willebrand factor (124 ± 99 IU/dl, p = 0.0004) levels were higher in ARM patients compared with healthy controls. Mean plasma fibrinogen and plasma viscosity levels were also higher in the patients (both p <0.001). Our observations would therefore suggest further pathophysiological insights into ARM, with an association between this disorder and markers of angiogenesis (VEGF), haemorheological factors, haemostasis, endothelial damage/dysfunction.

Rather than the existence of individual pathogenic processes,1 perhaps a close interaction between abnormal angiogenesis and the components of Virchow’s triad for thrombogenesis may contribute to the pathogenesis of ARM and the development of CNVM. Indeed, the availability of a blood marker for ARM could have potential value, as measurement of such a marker can be a non-invasive way of perhaps predicting individuals at high risk of developing ARM. We have recently applied such a concept (that is, a blood marker to monitor the progression of eye disease) in a study of plasma VEGF in diabetic proliferative retinopathy, where the high plasma levels were normalised at the 4 month follow up, after treatment with panretinal laser photocoagulation.1


positive rate (1 − specificity)” in the legend to the Figure 3 of their paper.1 Perhaps it would be better (but not mandatory) to present the area under the receiver operator curves (ROC). This will state the probability of correctly identifying a randomly selected participant as a false or true case and is therefore a measure of overall test validity. This will also offer an objective way of comparing different ROCs. We also note that the shape of the ROC for the DD-15 test was unusual (some specificity values were associated with two different specificity values). It is difficult to conceive of a data set that could generate a non-monotonic ROC curve and some comment on its unusual shape might have been useful.

Previous presentations: Nil
Commercial interests: Nil
LOUIS TONG
ANDREW CARKEET
Singapore National Eye Centre, Singapore
Correspondence to: Louis Tong, Singapore National Eye Centre, 11 3rd Hospital Avenue, Singapore 168751
Louiston@hotmail.com


BOOK REVIEWS


The cover of The Eye Book states that it is written for anyone needing to wear glasses and for healthcare professionals looking for an overview of eye health. As a non-ophthalmic clinician working in an eye hospital I hoped this short book would give me greater knowledge to do my job and, more importantly, to impress my colleagues without too much effort on my part. The Eye Book is an eclectic mix of information with topics covered ranging from detailed anatomy and physiology to facts about famous people and their sight problems.

The book starts with a clear and comprehensive introduction to the structure and function of the eye and the mechanism of vision. Although medical terms are included, Grierson uses simple language and he usefully illustrates some of harder to understand concepts with everyday comparisons. Eye care through the ages is summarised and the role of modern ophthalmologists and associated healthcare professionals described. Grierson includes an interesting short debate regarding the extension of healthcare professional roles in ophthalmology, although this is unfortunately slightly dated considering the recent rapid rise in nurse and optometrist led services.

Surprisingly, only a small part of the book is given over to common eye diseases and treatments. Again Grierson gives a clear and easily comprehensible account; however, it is disappointing that practical advice on coping with low or reduced vision is not included as it could be assumed that many people buying this book would be looking for this type of information. Instead a considerable portion of the book is taken up with accounts of famous people and their eye problems. Although very interesting to read, the usefulness of its inclusion is debatable, especially when considering the side effects, and overall management of patients on immunosuppression.

Overall, the book is an enjoyable read and certainly useful for the trainee. For a small book it would have benefited from greater editorial licence to merge the information in all the chapters more coherently.

ANDREW DICK


This is a concise, well written reference for students, residents, and clinicians interested in gaining a better understanding of electrophysiologic tests of the visual system.

The book is divided into five chapters, each devoted to one of the following electrophysiologic tests: the electroretinogram (ERG), the electro-oculogram (EOG), the focal and multifocal ERG, the pattern electroretinogram (PERG), and the visual evoked potential (VEP). Each chapter begins with a description of the physiology underlying each test and the specific techniques used to record responses. The chapters then include examples of the results of numerous different hereditary and acquired disorders, with accompanying fundus photographs in many cases. The book also explains the molecular basis of diseases which have been genetically characterised.

The authors have made significant improvements to the second edition of this book. The first edition included only a page each on focal and pattern ERG. In response to the development of the multifocal ERG, the current edition devotes an entire chapter to both the focal and multifocal ERG. The multifocal ERG holds promise in early diagnosis of many diseases, including glaucoma, and both of these techniques will play an increasingly important in future investigations of macular disorders. The section on pattern ERG has been greatly expanded and includes a lucid description of clinical applications for which the PERG is useful. In addition, the description of the PENG is integrated with the section on VEP, explaining how these tests can best be used to differentiate between macular and optic nerve dysfunction. The authors have included numerous clinical photographs and examples, making the text particularly relevant and easy to comprehend.

This textbook successfully meets the authors’ stated objectives to “provide a background on the physiologic processes that underpin the measurement of various electrophysiologic components, describe the clinical phenotypes of various disorders . . . for which electrophysiologic investigations are of potential value, discuss the various electrophysiologic findings . . . anticipated in different disease orders . . . (and to) clarify how the enlightened use of various procedures can be of value in the diagnosis and monitoring of patients with hereditary or acquired disorders of the retina, their fundi, and their visual systems.”
optic nerve, and visual pathway.” It is a valuable reference for anyone interested in obtaining a clear understanding of the objective measurement of visual function in a variety of diverse clinical disorders.

JACQUES L DUNCAN

NOTICES

Affordable eye care
The latest issue of Community Eye Health (37) discusses affordable eye care. 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; fax: (+44) (0) 7250 3207; email: eyeresource@ucl.ac.uk). Annual subscription £25. Free to workers in developing countries.

International Centre for Eye Health
The International Centre for Eye Health has published a new edition of the Standard List of Medicines, Equipment, Instruments and Optical Supplies (2001) for eye care services in developing countries. It is compiled by the Task Force of the International Agency for the Prevention of Blindness. Further details: Sue Stevens, International Centre for Eye Health, 11–43 Bath Street, London EC1V 9EL, UK (Tel: (+44) (0) 20-7608 6910; email: eyeresource@ucl.ac.uk).

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 or by contacting Dr Lucy Mathen (email address lucymathen@yahoo.com).

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).

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: krishna@giamsd01.vsnl.net.in and website: 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).

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; 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; website: 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@onfcomm.co.uk; website: www.onfcomm.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/- ICMC Australia Pty Ltd, GPO Box 2609, Sydney, NSW 2001, Australia (tel: +61 2 9241 1478; fax: +61 2 9251 3552; email: ophthalm@icmsaust.com.au; website: 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). 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).
A new colour vision arrangement test to detect functional changes in diabetic macular oedema

LOUIS TONG and ANDREW CARKEET

Br J Ophthalmol 2001 85: 1013
doi: 10.1136/bjo.85.8.1013b

Updated information and services can be found at:
http://bjo.bmj.com/content/85/8/1013.3

These include:

References
This article cites 2 articles, 1 of which you can access for free at:
http://bjo.bmj.com/content/85/8/1013.3#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/