A new substrain of the non-obese diabetic mouse which develops cataracts (NOD/Ba/Lop19)

EDITOR,—The non-obese diabetic (NOD) mouse is a spontaneous model of type 1 (insulin dependent) diabetes mellitus, frequently used in diabetes research.1 The colony at the medical college of St Bartholomew’s Hospital (NOD/Ba) was established in 1987 and some 55% of females and 15% of male mice spontaneously develop diabetes by 30 weeks of age.2 Cataracts are not a characteristic normally found in NOD mice but were observed during routine inspection in 1988. All animals in the substrain NOD/Ba/Lop19 now spontaneously develop cataracts in both eyes (typically at 104–193 days of age). There are differences between NOD/Ba/Lop19 and the other mice of the colony with puberty, gestation period, teeth eruption, and eye opening all taking place later. Cataracts of the type seen are often the result of metabolic disturbances; however, although blood glucose levels greater than 12 mmol/l are known to cause cataracts in experimental models,3 their development in NOD/Ba/Lop19 is not related to the development of diabetes (normally at 112–133 days) as they occur before blood glucose levels exceed 11.5 mmol/l. This is unusual in that cataract formation in other susceptible laboratory rodents usually precedes the development of a general disease state.4

The cataracts initially take the form of a visible dense white sclerotic central area (see Fig 1), accompanied by clouding of the lens itself, which becomes denser over a few days. Both eyes are usually affected within 5 days of each other. Back cross breeding experiments show the Mendelian inheritance patterns typical of a single recessive gene. It has been suggested that there may be a subset of young diabetic patients with unusual susceptibility to cataracts and other complications of diabetes affecting the eye5 and NOD/Ba/Lop19 could act as a specific model for this group. If the mechanism by which cataract formation occurs in NOD/Ba/Lop19 mice could be established then it could prove useful to determine if any diabetic patients who develop cataracts have the same genotypic and/or metabolic characteristics. This then raises the possibility of preventative treatment.

The support of the Joint Research Board of St Bartholomew’s Hospital is gratefully acknowledged.

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Cortically visually impaired children

EDITOR,—While Hoyt and Fredrick rightly state the heterogeneous aetiology of cortical visual impairment (CVI) in children,1 we were disappointed in their bland and unjustified dismissal of the value of electrophysiological studies in these cases. They fail to quote any electrophysiological studies more recent than 1979 in their review, of which there have been a not inconsistent number. As for our own work we have found that a normal flash VEP indicates statistically and clinically a better prognosis in blind babies with non-ocular visual impairment.2 Furthermore we would concede that in some cases flash VEPs can be normal in CVI.3 It is therefore clinically useful to perform evoked potential studies in these children, a position endorsed by the commentary in the same issue of BJOP.4 This states that electrophysiological investigations are mandatory in the investigation of babies with poor visual contact. We endorse this sentiment and although accepting the limitations of the technique, feel that VEP investigations provide valuable objective information in the assessment of these infants. Hoyt and Frederick rightly point out that further work is required in this area but we are encouraged by our initial CVI group but not even to attempt any review of work within the past 20 years—never mind the most recent—is at best misleading and at worst scientifically unacceptable.

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Automated perimetry by optometrists in patients at low risk of glaucoma

EDITOR,—The letter by Dayan et al1 raises some interesting questions regarding the examination and referral of patients by optometrists for further investigation in relation to open angle glaucoma. While the authors base their comments upon largely anecdotal evidence from a series of only 11 subjective visual field reports, there are nevertheless some important points to be answered from these comments.

Firstly, the College of Optometrists guidelines offer guidance based on clinical evidence to optometrists conducting eye examinations. They specifically encourage optometrists to conduct the appropriate tests on any individual patient as a matter of best practice. In the case of glaucoma, recommendations are made that visual field tests should be conducted on subjects over the age of 40, those with a family history of glaucoma, and those with suspicious optic discs or other risk factors.2

The majority of visual field tests used in ophthalmic practice are based upon static

Figure 1 A NOD/Ba/Lop19 mouse with cataracts. Note the thick band of sclerotic material on the right hand side.
perimetry (College of Optometrists annual clinical survey, 1998) and decisions then need to be made on the results obtained. Therefore, if one or two points are missed on a central field test does that mean an abnormality is present? The optometrist needs to make a judgment on this issue in the light of the complete clinical findings rather than simply exert a pass/fail criterion from a screening test.

Not surprisingly most glaucoma patients in hospital clinics are referrals from optometrists but evidently this is at the cost of a relatively high false positive rate.¹ Not surprisingly also, visual field test designers are continually trying to develop programs with high specificity and high sensitivity which help the user to make an appropriate decision regarding normal or abnormal findings and thus referral.

Whether the optometrist refers a patient to the general practitioner for further investigation is influenced by a number of factors. Optometrists are legally required to refer patients if an abnormality is suspected or found.

Therefore, realistically, individual practitioners are more concerned about missing pathology than referring false positives. This feeling is further strengthened by legal cases reaching the General Optical Council where optometrists have been sued (successfully) for not detecting and referring ocular pathology. Clearly, ophthalmologists do not wish to spend clinical time seeing large numbers of “normal” eyes although there must be a grey area where a patient will be referred with a reasonable measure of doubt as to the presence of an abnormality. What is an acceptable false positive rate with respect to referrals to a hospital eye clinic?

One of the main ways in which the referral process could be improved is by a formal notification system from ophthalmologists to optometrists to let individual optometrists assess the guidelines in practice and there are no easy answers; however, it is time to review the cut off age for routine visual field screening.

Author’s reply

Editor,—I thank Dr Giffiths for his reply to my original comments. However, I would like to answer some points that he raises.

The use of visual field screening in patients above the age of 40 in optical practice is based on the fact that the incidence of glaucoma increases above that age. Therefore, measuring the visual fields and combining this with the assessment of the optic disc is highly relevant in that group of the population. The highest positive predictive value (PPV) is demonstrated when information on all three factors is included.² ³

Logically it follows that the PPV of visual fields as a “stand alone” test increases if it is only used in a group with a higher cut off age—that is, 60 years by suggestion from Griffiths, given the age related nature of many ocular conditions including glaucoma. This approach is likely to miss a significant number of possible early chronic simple glaucoma cases. Conditions other than glaucoma may also be detected by routine visual fields testing, a point made in Griffiths’s original letter.

The legal position of the college guidelines may be misunderstood by practitioners in that, by not complying with them, he suggests that a practitioner may be held negligent. This is not the case since the guidelines are not set by the General Optical Council as law but are simply College of Optometrists professional guidelines given to members to represent current best practice.

Most optometrists feel that if they receive feedback on referrals to indicate a high false positive referral rate, referral criteria would be modified to correct this problem. Recent ophthalmological opinion does suggest that feedback on referrals would help case finding.¹

Finally, I do agree that it would be welcome and timely to have dialogue between ophthalmologists and optometrists regarding the age above which individuals should have their visual fields tested at routine eye test appointments. Much of the misunderstanding regarding referrals in this area could then be clarified.

This is also relevant in light of the current review of the GOC referral guidelines to optometrists relating to the present obligation to refer to a general practitioner when an abnormal finding is detected in the routine eye test.

RONALD STEVENSON


VISEOELASTIC

Editor,—I was very disappointed to read in the Br J Ophthalmol, a BMJ publication, an example of corrupt English usage in the January issue, on page 71, the term viscoelastic is freely used. I presume the term is addressing the properties of a substance which has both viscous and elastic properties. The words “viscous” and “elastic” are adjectives describing the property of a substance. It is therefore incorrect to use the terms as nouns. American English has coined the word viscoelastic and through common usage is encouraging others to adopt it. However, surely we should expect a native British journal to set a better example by using technically correct terminology.

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BOOK REVIEW


The editors of Ida Mann’s autobiography, Elizabeth Buckley and Dorothy Potter, have undertaken a task of a true devotion. Through their long standing respect and admiration for this giant of 20th century ophthalmology, the authors have successfully brought together an excellent book which reviews the somewhat meandering autobiography which Ida Mann herself wrote.

For those who are interested it is an extremely fascinating account of individuals who helped to form Ida Mann’s career from her early days at Moorfields and Oxford onto her period in Australia and the continuing research that she did there on Aboriginal demographics.

The autobiography itself provides a unique insight into the enormous energy, but even more so into the approach, which Ida Mann took to her work research. Undoubtedly, these were driven by a great interest in her topics. In addition, she paid great attention to detail and this is highlighted in the book itself with some
idiosyncratic but highly enjoyable personal references and even quotations which one must assume represent the spoken word.

There is also some rare insight into the politics involved in the emergence of early 20th century UK ophthalmology, with special reference to the difficulties and the advantages that women may have in developing medical careers—particularly in the field of ophthalmology.

Overall, this is a very enjoyable read and it can be recommended to all those interested in the history of ophthalmology.

JOHN V FORRESTER

NOTICES

Community based rehabilitation
The latest issue of the Community Eye Health (no 28) discusses community based rehabilitation in developing countries. 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: eyeresource@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 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.

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, 1999 at the Meistersingerhalle, Nürnberg, Germany. Further details: MCN resource@ucl.ac.uk) Annual subscription £25. Free to workers in developing countries.

British Ophthalmic Photographic Association
The British Ophthalmic Photographic Association (BOPA) will hold a workshop entitled "The other side of the chin rest" on 10 July 1999 at the Southampton Eye Unit. Topics include: consent; allergies and complications; living with visual impairment; and procedures. Cost £20. Further details: Tim Mole (tel: 01703 798747).

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 10022-1302, 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, 61500, Israel (tel: 972-3-514000; fax: 972-3-5175674/972-3-5140077; email: Eunos99@kences.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: 90 40-215389; fax: 90 40-248271; email: IAPB@ lvpeye.stph.net).

Ophthalmological Clinic, University of Crete
An international symposium on the macula will be held on 1–2 October 1999 at the Ophthalmological Clinic, University of Crete. Further details: Professor G Soubrane, Chef de Service, Clinique Ophthalmologique 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 Hansens, Dienst Oogheelkunde, de Pintelaan 185, B-9000 Gent, Belgium. Deadline for applications 31 December 1999.

XXXIV 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, Hamrarborg 1–3, Is-Kopavogur, Iceland (tel: +354 554 1400; fax: +354 554 1472; email: incentiv@itn.is).

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 Secretariat, MGR Congressi, Via Servio Tullio, 4, 20123 Milano, Italy (tel: 39 02 430071; fax: 39 02 48008471; email: dr2000@mgr.it).