LETTERS TO THE EDITOR

Seasonal variation in congenital toxoplasmosis

SIR,—Ocular toxoplasmosis is the most important cause of posterior uveitis and is considered to represent a late manifestation of congenital infection.^{1,2}

At present no definite cure exists for toxoplasmosis so prevention is of utmost importance. In 1984 the WHO urged the initiation of worldwide prevention projects to decrease the frequency of this congenital disease.

The moment of maternal infection during pregnancy was reported as an important factor in the severity and frequency of the fetal infection.³ Severe congenital toxoplasmosis with either neonatal death or neurologic manifestations and ocular involvement is only encountered if the maternal infection occurs during the first two trimesters of pregnancy. Later acquisition results mostly in subclinical fetal infections and accounts for about 65% of all maternal seroconversions. The cases of ocular toxoplasmosis manifested during adolescence and later are probably due to congenital infections associated with infection of the mother late in the pregnancy.

The aim of this study was to investigate whether the risk of maternal seroconversion depended on seasonal variation. We therefore analysed the birth dates of 532 patients with ocular toxoplasmosis, without evidence of any extraocular symptoms of toxoplasmosis and compared these data with the overall birth rate variation in the Netherlands over the same time period (Fig 1). The diagnosis of ocular toxoplasmosis was made on clinical grounds – in patients with unilateral focal necrotising retinitis sometimes associated with typical old pigmented scars. In doubtful cases an active formation of antitoxoplasmal antibodies in the eye was assessed by the Goldmann-Witmer coefficient.⁴ *Toxoplasma* serology was not routinely performed since *Toxoplasma* antibodies are present in the majority of the Dutch population and so positive titres in adults have no diagnostic value. The patients included were those who attended uveitis clinics with active ocular toxoplasmosis between 1987 and 1988. The birth dates of the patients and controls (population study of more than 20 000 persons per year) were between 1954 and 1969.

Figure 1 Seasonal variation in congenital toxoplasmosis.

Birth ratio = $\frac{\text{number of children born with ocular toxoplasmosis}}{\text{expected number}}$

Two significant differences between the overall birth rates and those of patients were observed: a higher birth rate of children with ocular toxoplasmosis in May and a lower birth rate in November compared with the expected number of births (Fig 1; χ^2 test, $p < 0.05$).

How are we to interpret these findings? All our patients had only ocular involvement of toxoplasmosis and so we can assume that the maternal infection probably took place during the third trimester of the pregnancy.³ A higher frequency of seroconversion in March, April, or May may thus be responsible for a peak of births observed in May.

These findings suggest that there may be a higher risk of contracting toxoplasmosis in the early spring and eventual preventive measures should take this phenomenon into account.

The authors thank the members of the Dutch Uveitis Group for their cooperation.

C MEENKEN
A ROTHOVA
A KIJLSTRA

Department of Ophthalmology-Immunology,
The Netherlands Ophthalmic Research Institute,
Amsterdam,

Department of Ophthalmology,
Academic Medical Centre,
Amsterdam, The Netherlands

JOOSTING
Department of Medical Physics,
University of Amsterdam,
Academic Medical Centre,
Amsterdam, The Netherlands

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Angioid streaks in β thalassaemia minor

SIR,—A report by Kinsella and Mooney¹ described a 42-year-old woman of Italian origin with coexisting angioid streaks and β thalassaemia minor. Her general physical and cutaneous examination was normal, and a skin biopsy in 1986 showed no histological evidence of pseudoxanthoma elasticum (PXE). She was referred to the dermatology department in November 1989. She had no symptoms referable to her skin but on close questioning agreed that her axillary skin had changed.

On examination lax skin was noted involving the patient's anterior neck and axillae. She had the typical 'plucked chicken' or cobblestone

pattern of PXE of the axillae, with more subtle change of her posterolateral neck, accentuated by stretching the skin. A 4 mm punch biopsy obtained from clinically involved axillary skin and stained with haematoxylin and eosin and Miller's elastic stain and von Kossa reagent showed characteristic histological changes of PXE: clumping, disruption, and calcification of the elastic fibres within the dermis. Punch biopsy of the adjacent normal appearing skin showed no histological abnormality.

An association between angioid streaks and PXE has been noted in at least 62% of cases of angioid streaks.² The cutaneous lesions of PXE usually first appear before age 10, but may be delayed until the fourth³ or fifth decade.⁴ Early changes are frequently clinically subtle. On occasion a histological change consisting of tiny foci of abnormal elastic tissue may be detected in skin which is not clinically altered.⁵ Random biopsy of skin is unlikely to be helpful in establishing a diagnosis of PXE. The sites of predilection include the side of the neck, said to be the earliest, most frequent, and most heavily involved site in PXE, and next the axillary areas.³ Improved diagnostic yield may be attained by taking biopsy samples from scars.⁶

In addition to PXE, angioid streaks have been described in various haemoglobinopathies, and there are single case reports of their occurrence in some thalassaemias.¹ The prevalence of angioid streaks in Paget's disease has recently come under scrutiny. A surprisingly low prevalence of 1.4% was noted, leading to the conclusion that Paget's disease is only infrequently associated with angioid streaks.⁷

Patients with angioid streaks of undetermined aetiology warrant careful clinical cutaneous evaluation with selective histological sampling to detect subtle changes of possible aetiological significance. If clinical examination and skin histology prove normal, these patients should be followed up until the fourth or fifth decade for possible subsequent development of PXE.

BRIGID F O'DONNELL
FRANK C POWELL

SEAN O'LOUGHLIN
Regional Centre of Dermatology
ROBERT W ACHESON
Regional Centre of Ophthalmology,
Mater Misericordiae Hospital,
Eccles Street,
Dublin 7,
Ireland

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Pattern visual evoked potential in ocular hypertension

SIR,—Drs Bray, Mitchell, and Howe are to be congratulated on their article on the prognostic significance of the pattern visual evoked potential in ocular hypertension.¹ They say that they

are the first to demonstrate such a prognostic significance for abnormalities found on electrophysiologic testing. In so doing they help ophthalmologists faced with ever mounting numbers of ocular hypertensive patients to decide which patients are at risk of developing glaucoma and therefore worthy of prophylactic treatment. However, before adopting their test strategy as a routine it would be helpful if they could amplify the precautions they took in this prospective study to truly identify those ocular hypertensive patients with an abnormal VEP who progress and develop a visual field defect.

In their article they describe the results of twice testing 49 ocular hypertensive patients with VEP and perimetry, first between 1984 and early 1989, and secondly in late 1989. They note that 7/24 (29%) reverted to normal. It would be helpful to know what was the test-retest variability in their laboratory.

Secondly, these patients had only two visual field tests analysed. Assuming that they had had previous tests and were 'experienced' patients, there are still many pitfalls found on drawing conclusions from analysing two visual fields, especially in glaucoma patients,¹⁻⁴ for the visual field can progress from 'normal' to 'abnormal' (and then back again) in consecutive fields. The authors should let us know the precautions taken to rule out such false positive results occurring in their patients.

RA HITCHINGS
Moorfields Eye Hospital,
City Road,
London EC1V 2PD

- 1 Bray LC, Mitchell KW, Howe JW. Prognostic significance of the pattern visual evoked potential in ocular hypertension. *Br J Ophthalmol* 1991; 75: 79-83.
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- 3 Heijl A, Lindgren A, Lindgren G. Test-retest variability in glaucoma. *Am J Ophthalmol* 1989; 108: 130.
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Reply

SIR,—We would like to thank Mr Hitchings for making a number of important observations. With regard to the false positive rate of the VEP, as we explain in discussion, intertest comparisons enable us to detect deterioration of VEP parameters, and thus abnormality, even when they still fall within the normal range. So, while it is true that the VEP of seven of our ocular hypertensive (OH) patients were reported as 'normal' on repeat testing, we are able to qualify these observations. In four of the seven cases such comparisons revealed an increase in latency in the fellow eye, 'normalising' a previously reported interocular difference, but nevertheless suggesting 'abnormality.' Of the other three, one was found to have consistently normal intraocular pressures during subsequent follow-up and in retrospect we feel should have been eliminated from the trial, and one who became 'normal' when he changed age control range (59 to 60 yr). This leaves one false positive for whom we have no explanation. Notwithstanding this, the true false positive rate of 3/24 (12.5%) is similar to that observed in the control group (2/26 or

7.7%) and within the degree of statistical precision one would expect from a trial of this size. Test-retest variability was investigated in four control subjects who were subjected to daily VEPs for three days. Mean intertest latency for this group was found to be 1.8 ms. Intertest interocular variability is insignificant, as it is less than the measurement accuracy of VEPs.

In relation to the second question, we acknowledge the current view that more than two static fields are required to make a firm diagnosis and concede the weakness of our study in this respect. However, in partial defence of our position, glaucoma was not diagnosed in those initially defined as OH on the basis of kinetic perimetry unless corresponding field defects were found on both Goldmann and Octopus perimetry. This procedure was adopted as a precaution against false positives and to ensure that their diagnoses had not changed from OH to glaucoma solely as a result of the use of computerised static perimetry. By this method field defects were confirmed in six of the seven patients. The other patient, who was subjected to Octopus perimetry alone, had 'pristine' fields on initial testing and subsequently developed a field defect involving points with up to 16 dB of loss of sensitivity within 12° of fixation. Both Heijl and Piltz have observed that points with normal or near normal sensitivity show the least intertest variability, and this is lowest in the most central portion of the field. Based on these observations, we are confident of our diagnosis in this case though we accept that intertest variability introduces a measure of uncertainty.

LC BRAY
KW MITCHELL
JW HOWE
Department of Ophthalmology,
Faculty of Medicine,
School of Surgical Sciences,
Royal Victoria Infirmary,
Newcastle upon Tyne NE1 4LP

OBITUARY

EG ATKINSON, MBChB, MSc,
MRCP

Edmund Atkinson had just resumed his clinical training in ophthalmology, after three years in research, when he died in a paragliding accident in France in June 1990. He had been an invaluable and enthusiastic member of the retinal vasculitis research group at St Thomas's Hospital, and presented his work both at the OSUK and ARVO. He qualified in medicine at Bristol University in 1982, and obtained his MRCP after working in local hospitals. He then moved to London to start his career in ophthalmology at St Bartholomew's Hospital. As he wished to develop his research interests as soon as possible he moved to St Thomas's Hospital, where in 1986 he became an MRC Training Fellow. He developed two new animal models of uveitis, and extended earlier work on its pharmacological modulation. Later he worked with the pharmacology department

to develop FITC-dextran angiography as a method for investigating permeability changes in human uveitis. At the time of his death, he was continuing his studies on cloning vitreous T-cells from uveitis patients. He was always a potent source of ideas, support, and enthusiasm and always wished to stretch his many talents to the full. It was tragic that his latest enthusiasm should also be the cause of his early death.

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NOTES

The 4th Annual Meeting of the Retinological Society (Retinologische Gesellschaft)

The 4th Annual Meeting of the Retinological Society (Retinologische Gesellschaft) will be held on 1 to 2 November 1991, at the Kupferbau-Building of the University of Tübingen, Gmelinstrasse 8, W-7400 Tübingen, Germany. Details from: Professor I Kreissig MD, Ophthalmology III, Schleichstrasse 12, W-7400 Tübingen, Germany. (Tel: 07071/293741, Fax: 07071-293730.)

Optical engineering

A meeting on Ophthalmic Technologies II (Part 2 of Biomedical Optics) will be held by the International Society for Optical Engineering on 19-24 January 1992. It will be at the Los Angeles Airport Marriott Hotel, Los Angeles, California, USA. Details from the society at PO Box 10, Bellingham, Washington 98227-0010, USA

Golden Jubilee Conference of All India Ophthalmological Society

The Golden Jubilee Conference of the All India Ophthalmological Society will be held in New Delhi from 2 to 6 February 1992, at the Ashok/Samrat Hotel. Further details: Dr R B Jain, organising secretary, Mohan Eye Institute, 11-B Ganga Ram Hospital Marg, New Delhi-110 060, India. (Tel: 587655, 5728969. Fax: 91-011-5728969).

First International Skull Base Congress

This congress, sponsored by the Skull Base Societies around the world, will be held on 14-20 June 1992 in Hannover, Germany, headed by Professor Dr med Professor H C Madjid Samii, Medical University of Hannover. A major event of this congress will be a special session on orbital diseases and surgery covering all aspects of an interdisciplinary approach. Further information from: Professor Dr M Samii, Director of the Clinic of Neurosurgery, Krankenhaus Nordstadt, Haltenhoffstrasse 41, D-3000 Hannover 1, Germany. (Tel: 0049-(0) 511-76 38 178, 76 38 606.)