LETTERS TO THE EDITOR

Amaurosis fugax in young adults

EDITOR,—We read with interest the article by O'Sullivan *et al.*¹ The nine presented patients went through extensive investigations, including echocardiograms in all cases. Yet, no evidence of an embolic or atheromatous aetiology was found. Unfortunately, the authors failed to mention whether the echocardiography was transthoracic or transoesophageal.

We had experience with a 29-year-old woman, with recurrent retinal artery branch occlusion in both eyes. A thorough investigation, including transthoracic echocardiography, failed to reveal any pathology. Transoesophageal echocardiography, however, disclosed mitral valve prolapse with a thickened mitral valve and numerous vegetations, which were probably the origin for the embolic retinal events.

It has been found that transoesophageal echocardiography leads to a significant improvement in the identification of potential cardiac sources for arterial embolism associated with cerebral ischaemic events when compared with results using transthoracic echocardiography.² Transoesophageal echocardiography has also been shown to be better in detecting mitral valve prolapse and other cardiac abnormalities in young patients.³ Greven *et al.*⁴ and Wiznia *et al.*⁵ have reported that transoesophageal echocardiography was more helpful than transthoracic echocardiography in disclosing the pathology that led to retinal vascular occlusion.

It seems to us that in cases of 'amaurosis fugax in young adults', when no pathological findings can be found, transoesophageal echocardiography is warranted.

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Reply

EDITOR,—We thank Dr Sadeh and colleagues for their comments. They are correct in assuming that transthoracic echocardiographic

studies were performed in the patients we reported. However, at the time our data were collected, transthoracic echocardiography was the standard non-invasive method widely available in general hospital practice and therefore the most appropriate modality for the investigation of our patients. It was carried out by experienced operators who obtained high quality images of the valvular structures in all cases. If inadequate images had been obtained, consideration would have been given to the more invasive investigation.

We accept that there is an increasing body of evidence which suggests that if a paradoxical source of embolism via the atrial septum is suspected and the valvular structures are normal on transthoracic echocardiography, then transoesophageal studies are indicated. As further experience is gained with this investigative technique, it will become more widely available and possibly applicable in cases such as ours.

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Glaucoma, ocular hypertension, cataract, and glucose tolerance

EDITOR,—The excellent paper by Harding *et al.*¹ provides further evidence of the association between diabetes and cataract and confirms the clinical association of glaucoma with cataract.² Another recognised and relevant association links diabetes mellitus and glaucoma in both directions—that is, diabetics are more likely to have glaucoma and glaucoma patients are more likely to be diabetic.^{3,4}

In the Department of Clinical Pharmacology, St Thomas's Hospital, London, I studied glucose tolerance in 21 ocular hypertensives (as defined by Hollows and Graham⁵) and 21 age and sex matched control subjects. Subjects with known diabetes were excluded. Each group contained 14 women and seven men. Ages (years, mean (SD)) were 63.8 (7.3) for ocular hypertensives and 63.1 (8.31) for controls. Testing was performed according to WHO recommendations.⁶ After a 12 hour overnight fast a venous blood sample was taken and subjects drank 82.5 g hydrous glucose dissolved in 300 ml tap water in less than 5 minutes. A further venous sample was taken 2 hours later. One patient in each group was excluded from final analysis for technical reasons.

Patients were classified as normal glucose tolerance (fasting glucose <6.7 mmol/l, 2 hour glucose <6.7 mmol/l), impaired glucose tolerance (IGT) (fasting glucose <6.7 mmol/l, 2 hour glucose >6.7 mmol/l but <10.0 mmol/l), or diabetes mellitus (DM) (fasting glucose ≥6.7 mmol/l or 2 hour glucose ≥10.0 mmol/l). Results (see Table) were analysed by χ^2 using Yates' correction. The χ^2 value was 7.152 and $p < 0.05$. This study demonstrates a significantly higher incidence of abnormal glucose tolerance (IGT or DM) in ocular hypertensives than age and sex matched controls.

These findings and the evidence from Hard-

ing and coauthors imply a triangular relationship between abnormal glucose tolerance (IGT or DM), raised intraocular pressure (ocular hypertension or primary open angle glaucoma), and cataract. The presence of any one of these disorders (and perhaps the 'strength' of that presence) is influential in determining the presence of either of the other disorders in the same individual. The clinical relevance of these findings in the ophthalmic clinic is simple; patients with raised intraocular pressure or cataract must have their urine tested to screen for diabetes mellitus, with additional investigation where glucose is detected in the urine.

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Reply

EDITOR,—I am grateful to Dr Brazier for his interest in our paper. His study is small but appears to show a clear association between abnormal glucose tolerance and ocular hypertension. Thus our work and his, combined with earlier reports, associate diabetes (and abnormal glucose tolerance), cataract, and glaucoma (and ocular hypertension). The extension from diabetes to abnormal glucose tolerance is important in that estimates of the proportion of an eye disease, for example, cataract, due to diabetes underestimate the role of glucose per se. At least three of the four major eye diseases are associated with diabetes so that a large proportion of total visual impairment in Western countries must be caused by one small molecule, glucose, and its metabolites.

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Pleomorphic adenoma of the lacrimal gland

EDITOR,—I read with interest the article by Rose and Wright¹ regarding their recommendations for diagnosis and treatment of pleomorphic adenomas of the lacrimal gland. The authors emphasise that biopsy of these lesions is often associated with recurrence and spread of the tumour, and they recommend against a biopsy in any case suspected of being a pleomorphic adenoma. Although I agree with them that a biopsy of the lesion, followed by termination of surgery with definitive surgery of the tumour at a later date is likely to result in recurrence of the tumour, it is unclear to me whether or not biopsy of the lesion for frozen section diagnosis, followed by definitive treatment of the lesion at the same time has the same probability of resulting in a recurrent tumour. I

	Normal	Impaired glucose tolerance	Diabetes mellitus
Ocular hypertension (n=20)	12	6	2
Controls (n=20)	19	1	0

would appreciate it if the authors could address this issue.

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- 1 Rose GE, Wright JE. Pleomorphic adenoma of the lacrimal gland. *Br J Ophthalmol* 1992; 76: 395-400.

Reply

EDITOR,—We thank Dr Miller for his interest and commentary about our paper on pleomorphic adenomas of the lacrimal gland.

We are unable to answer the question of whether the chances of spillage of tumour cells into surrounding tissues is less if the whole of the tumour is removed immediately after biopsy or after an interval of several days. Theoretically, biopsy with frozen section can reduce contact between normal tissue and the biopsy site. Biopsy will be trans-septal, however, whereas excision of lacrimal pleomorphic adenomas should use a lateral orbitotomy approach, so that there is potential for seeding of tumour cells during the surgical manoeuvres. Furthermore, the histopathological differential diagnosis of lacrimal gland lesions is more difficult with frozen section material than with appropriately stained paraffin sections.

Thankfully the majority of pleomorphic adenomas can be correctly diagnosed using the clinical and radiological criteria outlined in our paper. In these cases there is no need for a biopsy and the tumour can be removed with an intact capsule.

Our recommendation against biopsy of pleomorphic adenomas is based upon the landmark clinicopathological review of Font and Gamel¹; a view strengthened by the high rate of recurrence in a large series of Chinese patients,² many of whom were biopsied. With the current follow up intervals, our paper is unable to either confirm, or refute, this issue.

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- 1 Font RL, Jamel JW. Epithelial tumours of the lacrimal gland: an analysis of 265 cases. In: Jakobiec FA, ed. *Ocular and adnexal tumours*. Birmingham, AL: Aesculapius 1978: 787-805.
- 2 Ni C, Cheng SC, Dryja TP, Cheng TY. Lacrimal gland tumors. A clinicopathological analysis of 160 cases. *Int Ophthalmol Clin* 1982; 22: 99-120.

Cautery for lower lid entropion

EDITOR,—We read with interest the article by El-Kasaby.¹ It is important to recognise the basic pathophysiology of involutional entropion and the surgical approach must correct the anatomical involutional changes. These changes cause the preseptal orbicularis muscle to override the pretarsal muscle. Laxity of the lower lid retractors allows the lower border of the tarsal plate to rotate outwards and the loss of stiffness of the tarsal plate allows it to bend. Furthermore, involutional changes affecting the canthal tendons and tarsus lead to a horizontal laxity of the lid which is further aggravated by the relative enophthalmos caused by atrophy of the orbital fat. Cautery of the anterior lamella only corrects one of these four factors – namely, the orbicularis override, and the same result can be achieved by bedside transverse sutures.²

This condition was previously termed spastic entropion but the spastic component is

secondary to ocular irritation by inturning lashes. The author makes the mistake of trying to treat the effect rather than the cause of the condition and states that scars interrupt the continuity of the pretarsal part of the orbicularis muscle, thus eliminating the spasm which contributes to the entropion. While this may be partly true in the very short term, one has only to look at the orbicularis function of patients who have had a 'total' orbicularis myectomy for blepharospasm to appreciate that three burns would have a negligible effect on the function of the orbicularis muscle.

The author documents one recurrence of entropion in 50 procedures but the means of assessment is not stated. This is best evaluated by asking the patient to squeeze shut the eyelids and assessing the lids on opening.

In the series of photographs presented, there is clearly hyperpigmentation at the sites of the burns and this should be remembered as a side effect. El-Kasaby recommends this procedure for patients who are 'infirm and bedridden'. Most entropion surgery is performed using local anaesthesia and takes no longer than 15 to 20 minutes and addresses the underlying aetiology.

Modern oculoplastic surgeons such as Collin in Europe and Anderson in the United States have greatly advanced our understanding of the anatomy and physiology of the normal and abnormal eyelid and orbital structures. They have both stressed the systematic approach to evaluation of oculoplastic problems and devised specific operations to address the underlying problems. Ophthalmologists would do well to follow the examples set by these surgeons. While the author is to be congratulated for confirming the findings of Ziegler in 1909, the above factors must be borne in mind by the oculoplastic surgeon.

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- 1 El-Kasaby HT. Cautery for lower lid entropion. *Br J Ophthalmol* 1992; 76: 532-3.
- 2 Quickert MH, Rathbun JE. Suture repair of entropion. *Arch Ophthalmol* 1971; 85: 304-5.

Reply

EDITOR,—I thank Drs Patel and Flaharty for their interest in my article and for their comments. One should bear in mind that there are many specialist oculoplastic surgeons in the United States, but in the United Kingdom correction of lower lid entropion is usually performed by general ophthalmologists and the job is mainly left to juniors without much experience.

There is no doubt that a systematic approach to the evaluation of the main contributing factors in entropion is to be commended. Nevertheless, this needs a degree of experience as does the surgical tackling of the problem. The procedure I described is simple, effective, and can be done by any surgeon who has no access to specialist oculoplastic training.

Drs Patel and Flaharty believe that cautery of the anterior lamella only corrects preseptal orbicularis override. I do not share their view. They chose to ignore the effect of contraction of three vertical linear scars which was mentioned in the article. Also, relieving the spasm of the orbicularis, although it may not be a long term effect, stops the vicious circle of spasm, ocular

irritation, leading to more spasm. Involutional entropion is a multifactorial problem as pointed out and to correct one factor, such as orbicularis override, may often be sufficient.

Regarding the method of assessment of entropion postoperatively, the article is criticised for not mentioning the means of doing so. I believe the only method of assessment is to ask the patient to squeeze shut the lids. Stating this would have been mentioning the obvious.

The photographs are criticised for hyperpigmentation at the site of the burns. This does not occur and the particular patient shown already had pigmentation around the margins of both upper and lower lids. Pigmentation of the lower lid was not showing in the preoperative photograph because of the entropion. Hypopigmentation, however, is noted occasionally.

Drs Patel and Flaharty also mention that entropion procedures take no longer than 15 to 20 minutes. The procedure I described takes only 1 to 2 minutes and does not involve intraoperative bleeding or the use of suture material which may have to be removed later.

A simple and effective procedure, although described in a different form in 1909 by Ziegler, should be brought to light so that it is on the menu for ophthalmologists to use if they choose to.

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5-Fluorouracil and ocular toxicity

EDITOR,—We would like to draw your attention to an unusual side effect of the chemotherapeutic agent 5-fluorouracil. A 48-year-old man had been taking 5-fluorouracil orally, once weekly for 1 year following large bowel resection for colonic cancer with hepatic metastases. He remained systemically well, but after starting the tablets he developed eye problems. Initially he became intolerant of his hard contact lenses, which he had worn without problems for 20 years. At first this was attributed to the antiemetic, which was thought to be causing dry eyes. The antiemetic was stopped but the eye problem became worse. He developed recurrent episodes of pain in one or both eyes, which woke him from sleep early in the morning and persisted for 2 to 3 days. During these episodes he was severely incapacitated by photophobia. His eyes were slightly pink during the attacks but did not water continuously.

When first examined his visual acuities were 6/5 in the right eye and 6/6 in the left eye with spectacles. Examination was difficult owing to extreme light sensitivity. The lower lid margins showed keratinisation but his corneas looked normal. The 5-fluorouracil was stopped and after 2 weeks his symptoms had almost completely resolved. His conjunctiva and cornea could now be examined readily and were normal.

Ocular surface toxicity with 5-fluorouracil, giving rise to symptoms of photophobia and irritation, has been previously recorded.^{1,2} We think that this case is of particular interest because the patient's symptoms mimicked those of the recurrent corneal erosion syndrome.³ However, examination of the corneas revealed no evidence of such a lesion. The length of time the symptoms took to resolve after stopping the drug is consistent with previous reports in which symptoms from acute surface toxicity resolve within 2-3 weeks after discontinuing treatment.^{1,4,5}