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 'infirmit 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}

A further challenge of 5-fluorouracil was not felt to be appropriate since the symptoms were very unpleasant, and we felt that they could be attributed to the presence of the drug in the tear film. A direct correlation has been shown between the amount of lacrimation and the concentration of fluorouracil in the tears.⁶ Side effects due to ocular surface toxicity are well documented and include blurred vision, excessive lacrimation, irritative conjunctivitis, keratitis, blepharitis, cicatricial ectropion, and punctal stenosis.^{14,17} We thought it was of interest to record this new presentation which proved reversible upon discontinuing the 5-fluorouracil therapy.

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- 1 Hammersly J, Luce JK, Florenz TR, *et al.* Excessive lacrimation from fluorouracil treatment. *JAMA* 1973; 225: 747-8.
- 2 Bonadonna G, Brusamolino E, Pennucia V, *et al.* Combination chemotherapy as an adjuvant treatment in operable breast cancer. *N Engl J Med* 1976; 294: 405-10.
- 3 Brown N, Bron AJ. Recurrent erosion of the cornea. *Br J Ophthalmol* 1976; 66: 84-96.
- 4 Haidak DJ, Hurwitz BS, Yeung KY. Tear-duct fibrosis (dacryostenosis) due to 5-fluorouracil. *Ann Intern Med* 1978; 88: 657.
- 5 Insler MS, Helm CJ. Ankyloblepharon associated with systemic 5-fluorouracil treatment. *Ann Ophthalmol* 1987; 19: 374-5.
- 6 Christophides N, Vajda FJE, Lucas I, Louis WJ. Ocular side effects with 5-fluorouracil. *Aust NZ J Med* 1979; 9: 143-4.
- 7 Caravella LP, Burns JA, Zangmeister M. Punctal-canalicular stenosis related to systemic fluorouracil therapy. *Arch Ophthalmol* 1981; 99: 284-6.

Fractured laser fibreoptic cord

EDITOR,—The report by Bloom *et al*¹ on lenticular burns following argon panretinal photocoagulation is interesting. This article highlights an unusual complication of posterior segment laser surgery. The source of the problem was the fibreoptic cord. We would like to emphasise the importance of maintenance of fibreoptic cords.

Our department now uses a double frequency YAG 'crystal focus emerald' laser (Biovision, Park Center, Walnut Creek, CA, USA) which produces monochromatic green light of 532 nm for posterior segment laser surgery. This solid state photocoagulator incorporates a helium neon system to allow visualisation of the aiming beam. Several authorised laser users complained that the aiming beam could not be seen as before and was only visualised after certain modifications were made including decreasing the overall illumination and using a red free filter; however, this led to poor resolution of retinal details. It was also noted that an increased power level was required to obtain the same retinal response. Peripheral photocoagulation became extremely difficult and treatment of all patients requiring macular laser treatment had to be postponed.

The manufacturers of the laser were asked to inspect the system and it was found that the fibreoptic cord was kinked and damaged at its entry to the microscope housing. Replacement

of the cord and securing it in a better position led to resolution of the initial problem. Fortunately there were no documented complications, but some patients did have to be relisted for their laser treatment in an already busy department.

We would recommend in accordance with Bloom *et al* that, apart from routine maintenance of laser systems, the fibreoptic cord must be protected at all times from even minimal injury.

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- 1 Bloom SM, Mahl CF, Schiller SB. Lenticular burns following argon panretinal photocoagulation. *Br J Ophthalmol* 1992; 76: 630-1.

Reply

EDITOR,—The comments by Drs Singh and Swa underscore the necessity of protecting the laser fibreoptic cord from injury at all times.

We have also been using the crystal focus emerald laser (Biovision, Walnut Creek, CA, USA) for several years without fibreoptic damage. This laser employs a portable, removable delivery system that attaches to a variety of slit-lamps. We have left this attachment permanently secured to the slit-lamp in our laser suite, thereby minimising risk of fibreoptic damage.

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Iris crystals and uveitis

EDITOR,—I read with interest the report by Lam *et al*¹ describing three patients with iris crystals in chronic iridocyclitis. I would like to add another case to the literature.

A 15-year-old Asian girl presented in November 1990 with gradual, painless reduction of vision in both eyes over the previous 2 years. Examination revealed a visual acuity of 6/9 in each eye with a low myopic correction. She had bilateral panuveitis, early posterior subcapsular lens opacities, mild diffuse retinal vasculitis with inferior vitreous snowballs but no frank snowbanking. The right iris stroma showed multiple, tiny, refractile crystalline deposits. A few pupillary iris (Koepe) nodules were noted in each eye and a number of small follicles were seen in the inferior conjunctival fornices. She was treated with topical steroids only and thoroughly investigated. The only abnormalities detected were a slightly raised serum IgE and an iron deficiency anaemia. Biopsy of the conjunctival follicles showed chronic inflammatory change only. In June 1991, her vision dropped to 6/18 right and 6/24 left due to macular oedema. She underwent a short course of systemic steroids with rapid improvement in vision. When she was last reviewed in February 1993 her vision was 6/24 right, 6/9 left; the cause for the reduced right vision being a combination of lens and vitreous opacities. Interestingly, apart from at presentation, the iris crystals were not seen again until her visits in November 1992 and February 1993. At no time were crystals seen on the left iris.

It is likely that she may require right cataract extraction in the near future, which will allow detailed analysis to be performed on this unusual physical sign.

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- 1 Lam S, Tessler HH, Winchester K, van Hecke H, Lam BL. Iris crystals in chronic iridocyclitis. *Br J Ophthalmol* 1993; 77: 181-2.

Reply

EDITOR,—We would like to thank P I Murray for reporting another case of iris crystals. As in previous reports, this case showed that iris crystals are associated with chronic uveitis, could be unilateral, and may transiently disappear.^{1,2} However, this case has some unique features. To our knowledge, this is the only case of iris crystals that occurred in a patient with chronic panuveitis (the previously reported cases occurred in patients with chronic iridocyclitis). Furthermore, the elevation of serum IgE levels is also intriguing, since hypergammaglobulinaemia has been documented in some of the cases of iris crystals.¹

We believe that iris crystals occur more commonly than is reported. Further studies and case reports will be needed to elucidate the pathogenesis of iris crystals.

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- 1 Lam S, Tessler HH. Iris crystals and hypergammaglobulinemia. *Am J Ophthalmol* 1990; 110: 440-1.
- 2 Lam S, Tessler HH, Winchester K, van Hecke H, Lam BL. Iris crystals in chronic iridocyclitis. *Br J Ophthalmol* 1993; 77: 181-2.

OBITUARY

T A CASEY

Thomas Aquinas Casey, director of the corneoplastics unit at East Grinstead and consultant at Hillingdon Hospital, died on 25 February 1993, from a rapidly progressive lung cancer, at the age of 63.

After qualifying in Dublin, and nearly 10 years at Westminster Hospital as ophthalmic registrar, Tom was appointed to direct the corneoplastics unit on the sudden death of its founder, Sir Benjamin Rycroft. There he established an impressive postgraduate centre for teaching and research, including a three day international corneoplastics congress in 1977. At an early stage he had pioneered a technique for deep freezing corneas (which permitted the establishment of a bank of tissue typed donor material), and other innovations in corneal surgery, such as the use of recombinant epidermal growth factor. This innovative activity was accompanied by copious publications, of which the latest, a prize winning atlas of corneal dystrophies, came out only a year ago.