# LETTERS TO THE JOURNAL

Sir,

**Malignant Melanoma of the Lacrimal Sac**

Primary tumours of the lacrimal sac are rare. We describe an unusual case of malignant melanoma of the lacrimal sac. We discuss the presentation, management and prognosis of this unusual lethal tumour.

*Case Report*

A 76-year-old Caucasian man presented with a month's history of left blood-stained epiphora and a single episode of left-sided epistaxis. Clinical examination revealed a firm, localised, non-tender mass at the inner canthus consistent with a lacrimal sac swelling (Fig. 1). Sac washout demonstrated obstruction to entry into the lacrimal sac with reflux of blood-stained fluid. Cytology report of the fluid showed red corpuscles and benign epithelial cells. Ocular examination was otherwise unremarkable. In particular there was no evidence of ocular melanosis or melanoma.

Examination of the nose showed a normal inferior meatus with dried blood along the left nasal floor. There was no bleeding source or other abnormality apparent higher in the nose, in keeping with bleeding from the nasolacrimal apparatus and drainage down to the inferior meatus.

A dacryocystogram showed obstruction to flow in the left nasolacrimal duct. CT scan showed a soft tissue swelling at the inner canthus, separate from the globe, with no associated bony destruction (Fig. 2).

The patient was otherwise in good general health with no lymphadenopathy or organomegaly. No metastatic disease was evident on chest radiograph or ultrasound scan of the liver.

On formal surgical exploration, a distended, firm lacrimal sac mass was identified and incised. The entire sac was seen to contain a black polypoid mass with no macroscopic evidence of local spread either from or to the sac. An intraoperative frozen section of the mass showed a malignant tumour composed of pleomorphic epithelioid cells (Fig. 3a). Sparse granular brown pigment was evident within both tumour cytoplasm and stroma. A histochemical stain for melanin was positive; immunohistochemistry demonstrated strong cytoplasmic labelling for S100 protein and for the melanoma-specific marker HMB 45 (Fig. 3b). This combination of findings was considered diagnostic of malignant melanoma. A dacryocystectomy was therefore performed, including as much as possible of the nasolacrimal duct.

Post-operatively the patient underwent a 6-week course of radiotherapy (6000 rads) to the left lacrimal region. He tolerated this well and a CT scan 5 months later showed resolution of the lacrimal sac mass. There was some persisting soft tissue thickening, felt to be secondary to the radiotherapy. The patient was symptomatically better with infrequent epiphora and no staining of tears. No mass was palpable at the inner canthus. Further systematic examination and investigation showed no metastatic disease.

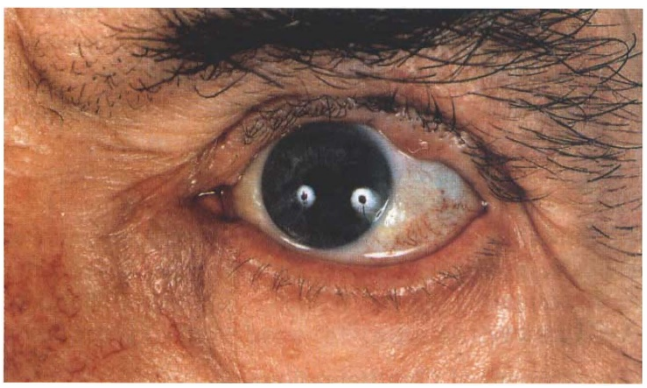


**Fig. 1.** *Photograph of a left inner canthal mass with epiphora consistent with a lacrimal sac swelling.*

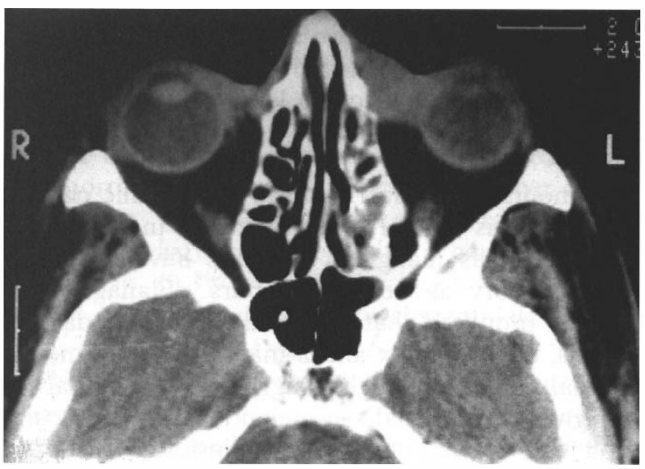
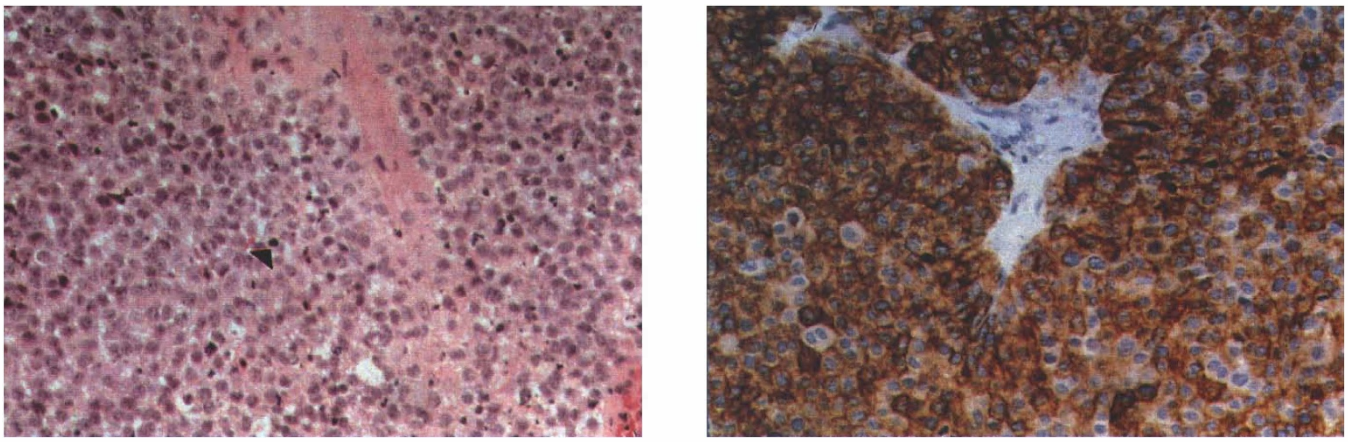



**Fig. 2.** *CT scan without contrast showing a soft tissue mass at the left inner canthus. There is no associated bone destruction.*



(a) (b)

**Fig. 3.** *(a) This section shows sheets of melanoma cells with an epithelioid morphology. There is a considerable degree of nuclear pleomorphism and most nuclei contain coarse nucleoli. A mitotic figure (arrowed) is visible near the centre of the field; however, nuclear debris from apoptotic cells is more conspicuous (haematoxylin and eosin, ×465). (b) This section shows the tumour cells stained immunochemically for the melanoma marker HMB 45. In some areas there is diffuse cytoplasmic staining together with strong labelling of the membranes (immunoperoxidase reaction, ×465).*

Unfortunately, 8 months later the patient developed left cervical lymphadenopathy. Histology showed the nodes to contain melanoma. As the nodes were mobile, simple local excision was performed. Two years later, he died from widespread metastatic disease.

*Discussion*

The largest cumulative series of primary lacrimal sac tumours reviewed to date has been by Flanagan and Stokes,[1] in which 128 (60%) of 212 tumours were malignant. Undifferentiated epidermoid squamous carcinoma was the commonest malignancy, with malignant melanoma accounting for only 8 (4%) of all malignancies. Of 117 lacrimal sac tumours found on file by Pe'er *et al.*[2] over a 24-year period, 8 were malignant melanomas. Two of these were amelanotic and one had been reported previously.[3] Metastatic malignant melanoma to the lacrimal sac is an even rarer entity[4] and was not seen in either of these series.

Tumours of the lacrimal sac may mimic chronic dacryocystitis and result in delay in diagnosis, particularly as malignant tumours have the same initial history as benign tumours.[5] Flanagan and Stokes[1] proposed that the triad of chronic dacryocystitis, bloody reflux and a mass above the medial canthal tendon was highly suggestive of lacrimal sac malignancy. Lacrimal sac melanomas have in common with mucosal melanomas an insidious onset and limited early visibility, unlike cutaneous and conjunctival melanomas. This may result in delayed diagnosis and poorer prognosis. Definitive diagnosis is usually only made on histopathology with special staining of tissue specimens.[5,6]

The histogenesis of malignant melanoma of the lacrimal sac remains obscure. Melanocytes are not usually found in lacrimal tissue but are seen in adjacent conjunctiva. The embryology of these two structures is intimately related and it is thought that during development melanocytes may have migrated to, or have been laid down beneath, the lacrimal sac epithelium during ectodermal downgrowth from the conjunctival epithelium.[6,7]

To date follow-up examination is available in 17 cases of malignant melanoma of the lacrimal sac.[2,3,8,9] There appears to be no sex predilection and patients' ages ranged from 38 to 80 years. All had one or more of the triad of symptoms described above. Twelve had recurrences despite treatment and the remaining 5 followed up for between 8 weeks and 14 months had no recurrences.[7–9] Local recurrence and lymphadenopathy was commoner than distant metastases.[6]

The rarity of this tumour precludes a clear consensus regarding treatment, though due to its lethal potential, most now agree that treatment should consist of wide local excision of the entire nasolacrimal system and post-operative radiotherapy; however, the role of adjuvant therapy remains controversial.[2,4,5,8,9]

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*References*

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Sir,

**_Acanthamoeba_ as a 'Transient' in the Corneal Scrape of a Poorly Compliant Soft Contact Lens Wearer with Peripheral Keratitis**

Clinical diagnosis of *Acanthamoeba* keratitis should ideally be confirmed by the isolation of the protozoan from corneal tissue.[1] Prior to culture, the amoebae are often readily detectable using 'wet' preparations of corneal cells; smears can be stained for examination using bright field microscopy,[2] or alternatively can be visualised unstained using phase contrast.[3] Such screening of the corneal tissue permits initiation of rational antiprotozoal chemotherapy at a very early stage following diagnosis, and is especially helpful if the clinical picture is not typical.

The spectrum of clinical signs recorded during early stages of the infection process are varied[4] and these can often be confused with other aetiologies. A history of contact lens wear, particularly in a younger person, may increase the index of suspicion of an *Acanthamoeba* infection.[5] In such patients, however, laboratory isolation of *Acanthamoeba* should not be regarded as the sole criterion for diagnosis, since it is likely that in certain circumstances the protozoan may be present in the tear film components but not as a contributor to any ocular disease process. We present here such a patient, who presented with a peripheral ulcer and in whom *Acanthamoeba* was isolated from the corneal scrape, but was not considered to have been the cause of the keratitis.

*Case Report*

A 24-year-old male medical student, using soft contact lenses to correct mild myopia, presented to an ophthalmic casualty unit in Glasgow, with a 48-hour history of discomfort and mild photophobia in the left eye. Twenty-four hours prior to presentation his contact lenses were removed and 4 drops of chloramphenicol (0.5% w/v, 1 drop, 4 times per day, for 1 day) applied to the eye. At presentation, visual acuity with spectacles was 6/6 + 4 for the right eye and 6/6 − 1 for the left eye. The left eye showed mild circumcillary injection and, at about 5 o'clock, a 1 mm diameter peripheral corneal ulcer with epithelial defect (Fig. 1). An occasional cell was observed in the anterior chamber.

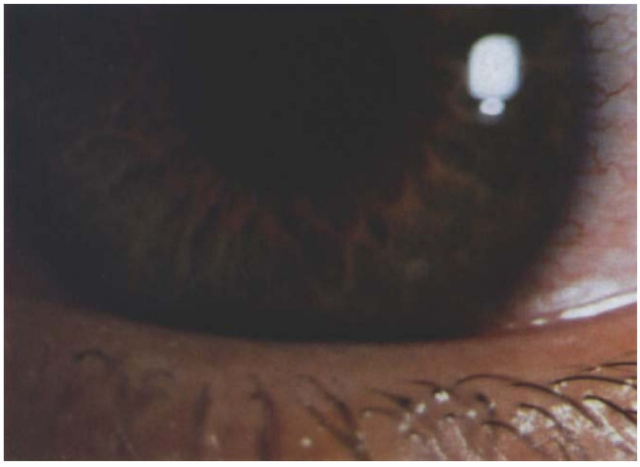

**Fig. 1.** *The left eye at presentation showing a peripheral ulcer 1 mm in diameter.*

The ulcer was scraped using a 23 gauge needle and smeared onto a glass slide; tissue was then plated onto blood agar. Although the clinical appearance was not reminiscent of *Acanthamoeba* keratitis, it was nevertheless considered that since the patient was a young contact lens wearer, tissue should be examined to exclude unequivocally the protozoan as a contributor to the pathogenesis of the disease. The needle with associated corneal scrape tissue was placed into a plastic centrifuge tube containing 1 ml defined axenic medium[6] and aliquots (0.05 ml) removed for microscope examination, prior to culture.

The Gram-stained smear was reported by the routine microbiology laboratory to contain a single polymorphonuclear cell; no bacteria or other organisms were recorded. Despite this, topical drop treatment was commenced with a combination of gentamicin (0.3%, hourly by day), ciprofloxacin (0.3%, hourly by day) and cyclopentolate (1%, 3 times/day). Twenty-four hours later there was no epithelial defect, a residual subepithelial haze was present but cells were not discerned in the anterior chamber. The medications were continued 2-hourly by day for 4 days, after which the clinical signs had improved considerably. The visual acuity at this time was 6/5.

Scanty growth of bacteria was subsequently recorded from the blood agar plate. After incubation