

Sir,

Acute myeloid leukaemia presenting as retinal vein occlusion and eyelid swelling

Eye (2002) **16**, 202–203. DOI: 10.1038/sj/EYE/6700058

Acute myeloid leukaemia may manifest itself in the eyes in many ways. Retinal involvement is the most common. Cutaneous lesions have also been described but periorbital cutaneous infiltration is rare. We report an unusual case which illustrates simultaneous involvement of periorbital skin and retinal vasculature by acute myeloid leukaemia. Palliative radiotherapy to the infiltrated eyelids produced effective symptomatic relief.

Case report

A 77-year-old Chinese woman was referred after a routine optician check showed flame haemorrhages along the superonasal arcade in the left eye suggesting superonasal branch retinal vein occlusion. She was otherwise asymptomatic with vision of 6/18 in both eyes. Anterior segments and intraocular pressures were normal. There were bilateral moderate cataracts.

Baseline investigations including full blood count, urea and electrolytes, blood glucose, lipid profile, clotting, erythrocyte sedimentation rate and immunoglobulin screen were performed. This revealed a raised white cell count of $17.3 \times 10^9/l$ with monocytosis. Urgent bone marrow biopsy showed reduced erythropoiesis and marked increase in primitive monocytoid cells with foamy blue-grey cytoplasm and cleaved nuclei. This confirmed the diagnosis of chronic myelomonocytic leukaemia in transformation into acute myeloid leukaemia.

Further ophthalmic assessment was requested when the patient developed periorbital swelling 2 weeks later. Examination showed bilateral upper and lower lid diffuse swelling causing narrowing of the palpebral fissures (Figure 1). The overlying skin was indurated and tender to touch. There was bilateral conjunctival chemosis. Vision in the left eye was reduced to 6/60. The remainder of the examination was unremarkable.

An urgent CT scan showed bilateral severe soft tissue thickening around the anterior globes but intraorbital structures and optic nerves were normal (Figure 2). Biopsy of the periorbital skin showed diffuse infiltration of the dermis by cells with folded nuclei and pale cytoplasm (Figure 3a). Occasional cells showed positivity with chloroacetate esterase in keeping with a myeloid leukaemic infiltrate (Figure 3b).

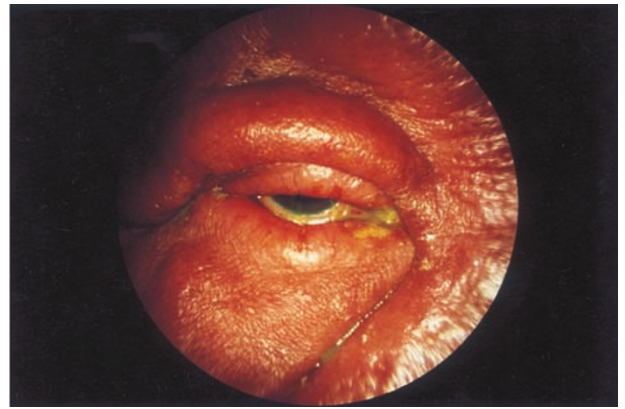


Figure 1 Anterior segment photograph of the right eye showing diffuse swelling of the upper and lower lids causing narrowing of the palpebral fissure.



Figure 2 Axial cut of CT scan of the orbits showing bilateral severe soft tissue thickening around the anterior globes and normal intraorbital structures.

The patient received palliative chemotherapy with etoposide. Palliative radiotherapy to the eyelids with 10 Gray divided into two treatments resulted in reduction of eyelid swelling, enabling better eye opening. Vision in the left eye returned to 6/18.

Comment

Retinal vein occlusion is a significant cause of visual impairment in the middle-aged and elderly population. Various risk factors have been identified, including hypertension,^{1,2} hyperlipidaemia,³ diabetes mellitus³ and hyperviscosity syndromes.⁴ This case illustrates the importance of investigating for such risk factors in patients with retinal vein occlusion, where hyperviscosity secondary to leukaemia is found.

Ophthalmic involvement is frequently seen in leukaemia.^{5–7} The retina is most commonly affected, either as a result of direct infiltration or secondary to

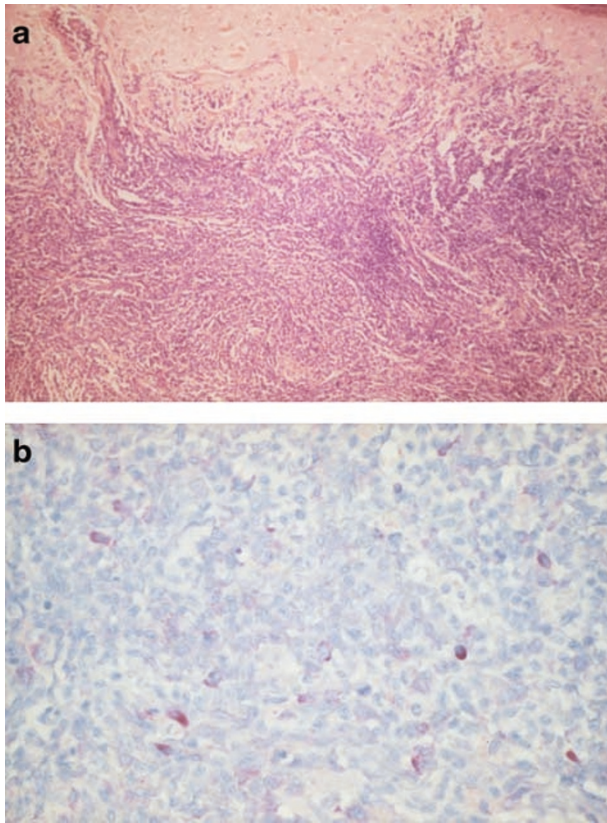


Figure 3 (a) Periorbital skin biopsy (low magnification) showing diffuse infiltration of the dermis by cells with folded nuclei and pale cytoplasm. (b) Periorbital skin biopsy (high magnification) showing occasional cells staining positive with chloroacetate esterase, in keeping with a myeloid leukaemic infiltrate.

changes in blood viscosity and clotting status.⁷ Cutaneous lesions have also been well described.^{6,8,9} Involvement of the periorbital skin however is rare.^{6,10,11} Treatment of cutaneous lesions with radiation is effective in producing symptomatic relief.¹¹ This modality of treatment is of particular value in providing symptomatic relief in terminally ill patients while avoiding eyelid surgery.

This case illustrates the different ways in which acute myeloid leukaemia can manifest itself in the eye. It also demonstrates the efficiency of radiotherapy as a palliative treatment for subcutaneous eyelid leukaemic infiltration.

References

- 1 Cole MD, Dodson PM, Henoles S. Medical conditions underlying retinal vein occlusion in patients with glaucoma or ocular hypertension. *Br J Ophthalmol* 1989; **73**: 693–698.
- 2 Dodson PM, Clough CG, Downes SM, Kritzinger EE.

- Does type II diabetes predispose to retinal vein occlusion? *Eur J Ophthalmol* 1993; **3**: 109–113.
- 3 Dodson PM, Kritzinger EE, Clough CG. Diabetes mellitus and retinal vein occlusion in patients of Asian, west Indian and white European origin. *Eye* 1992; **6**: 66–68.
- 4 Bhagat N, Goldberg MF, Gascon P. Central retinal vein occlusion: review of Management. *Eur J Ophthalmol* 1999; **9**: 165–180.
- 5 Duke-Elder S (ed). *System of Ophthalmology. Vol X: Diseases of the Retina*. CV Mosby: St Louis, 1967, pp 387–393.
- 6 Thall E et al. Acute monocytic leukaemia presenting in the eyelid. *Ophthalmology* 1986; **93**: 1628–1631.
- 7 Schachat AP et al. Ophthalmic manifestations of leukaemia. *Arch Ophthalmol* 1989; **107**: 697–700.
- 8 Lever WF, Schaumburg-Lever G. *Histopathology of the Skin*, 5th edn. JB Lippincott: Philadelphia, 1975, pp 748–750.
- 9 Mercer ST. The dermatosis of monocytic leukaemia. *Arch Dermatol Syphil* 1935; **31**: 615–635.
- 10 Ni Z. Histopathological classification of 3510 cases with eyelid tumor. *Chung Hua Yen Ko Tsa Chih* 1996; **32**: 435–437.
- 11 Pilz J, Vogt HJ. Soft roentgen therapy in cutaneous metastases of the eyelids. *Klin Monatsbl Augenheilkd* 1995; **206**: 52–53.

CMG Cheung and MD Tsaloumas

Birmingham and Midland Eye Centre
City Hospital, Dudley Road
Birmingham B18 7QU, UK

Correspondence: CMG Cheung
E-mail: gemmycheung@doctors.org.uk

Sir,

Solar retinopathy after the 1999 solar eclipse in East Sussex

Eye (2002) **16**, 203–206. DOI: 10.1038/sj/EYE/6700067

Introduction

We studied 15 patients who suffered solar retinopathy as a result of viewing the subtotal (98%) solar eclipse in East Sussex on 11th August 1999.

Methods

Patients who viewed the eclipse were defined as having solar retinopathy if they were symptomatic with visible retinal signs consistent with a solar burn. At 3 months achromatic contrast sensitivity (ACS) and