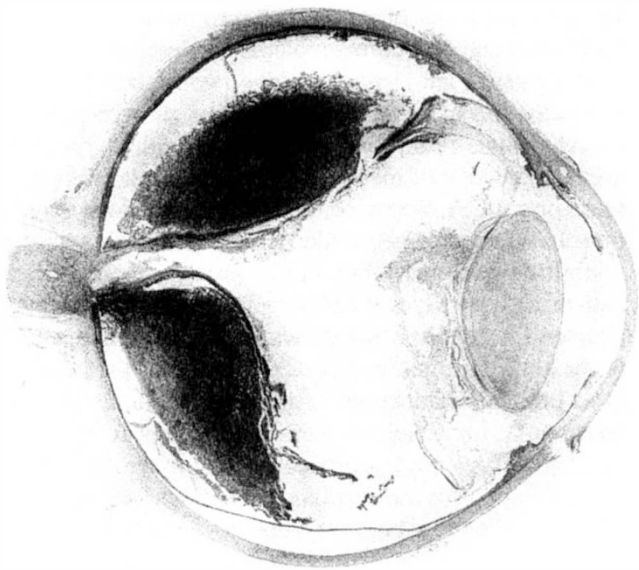

Fig. 2. *Section of the whole eye showing total detachment of the retina which is fragmented; haemorrhagic exudates fill the subretinal space. Haematoxylin and eosin, ×5.*

seen, and there was associated haemorrhage. In particular, there was massive haemorrhage into the subretinal space, the retina being detached, fragmented, and partially destroyed (Fig. 2). Large numbers of Gram-positive cocci were identified (Fig. 3). There was no evidence of an intraocular neoplasm and on histopathological grounds the diagnosis was haemorrhagic retinal detachment and infective panophthalmitis.

On the fourth post-operative day the patient developed a pyrexia; at this time also there was a suspicion of herpes zoster on his left upper arm. Blood cultures were negative. Systemic antibiotics were given and the pyrexia settled; he was subsequently discharged home. About 4–6 weeks later, however, i.e. in January 1991, he complained of severe pain in his chest, back and wrists and shortly after emergency admission to hospital he died.

At post-mortem the cause of death was given as a ruptured thoracic aorta associated with an infective endocarditis and myelodysplasia. There were septic vegetations on the aortic valves and culture produced *Staphylococcus epidermidis, Enterobacter aerogenes* and *Candida albicans*.

Discussion

Although over the years progress has been made in the evaluation of patients with suspected malignant melanoma of the choroid, difficulties continue to exist. Shields *et al.*[1] listed various lesions which clinically may resemble malignant melanoma of the posterior uvea; most commonly these are choroidal naevus, disciform degeneration, choroidal haemangioma and congenital hypertrophy of the retinal pigment epithelium. Morgan and Gragoudas[2] reported three cases of limited suprachoroidal haemorrhage resembling choroidal melanoma and in which serial clinical observation of the patients helped to resolve the diagnosis.

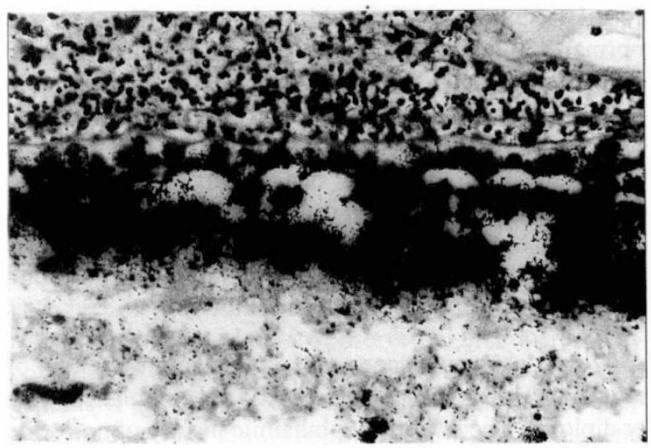

Fig. 3. *Section through the choriocapillaris and the retinal pigment epithelium showing dense infiltration by Gram-positive cocci. Gram stain, ×500.*

In the case presented it would appear that in association with the myelodysplasia, the low platelet count led to the haemorrhagic detachment of the retina which clinically simulated malignant melanoma of the choroid. The low white cell count, pre-existing valvar heart disease and recent corticosteroid treatment were all predisposing factors in the development of infective endocarditis. The panophthalmitis presumably was metastatic. Of significance is the fact that it was only by histopathological study of the enucleated eye and post-mortem examination of the patient that the full, correct diagnosis was firmly established.

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Sir,

Discrete Metastasis to an Extraocular Muscle

We report the case of a patient who was found to have an enlarged lateral rectus muscle in the absence of any clinical signs or symptoms of systemic disease. Biopsy of the swelling demonstrated oat cell carcinoma, which was also

found on sputum cytology, although chest radiograph was normal. Although orbital metastases may involve muscles secondarily, discrete metastasis to the extraocular muscles is rare. A search of the literature reveals only eight reported cases: five from carcinoma of the breast,[1–4] one from carcinoma of the lung,[5] one from a cutaneous melanoma,[6] and one of unknown origin.[7] This is the first report of a case of metastasis to an extraocular muscle from a small cell tumour of the bronchus.

Case History

A 59-year old woman presented with a 1-month history of reduced vision in the left eye. She did not complain of pain or diplopia. There was no ophthalmic history of note. She had been investigated 7 years previously for lethargy and a macrocytosis which was thought to be due to a high alcohol intake.

On examination her corrected visual acuity was 6/9 right and 6/24 left. There was 4 mm of non-reducible left proptosis, and hyperaemia over the insertion of the left lateral rectus muscle. Abduction and adduction of the left eye were markedly reduced, but elevation and depression were normal, and there was no lid retraction or lid-lag. Intraocular pressures were normal. No afferent pupillary response was demonstrable, and fundoscopy was normal. The patient was clinically euthyroid. An orbital CT scan demonstrated gross thickening of the left lateral rectus with displacement of the optic nerve (Fig. 1). The right medial rectus appeared slightly thickened.

Four days later the patient's left visual acuity had fallen to 6/60 with correction, and a left relative afferent pupillary defect was demonstrable. The proptosis was unchanged, and the optic disc and fundus appeared normal. Thyroid function tests showed TSH 1.8 mU/l, free T_4 21 pmol/l, and tests for thyroid antibodies were negative. The results of liver function tests were abnormal, with elevated levels of aspartate transaminase, alkaline phosphatase and gamma-glutamyltransaminase. A provisional diagnosis of dysthyroid eye disease was made, and treatment with intravenous methylprednisolone was commenced.

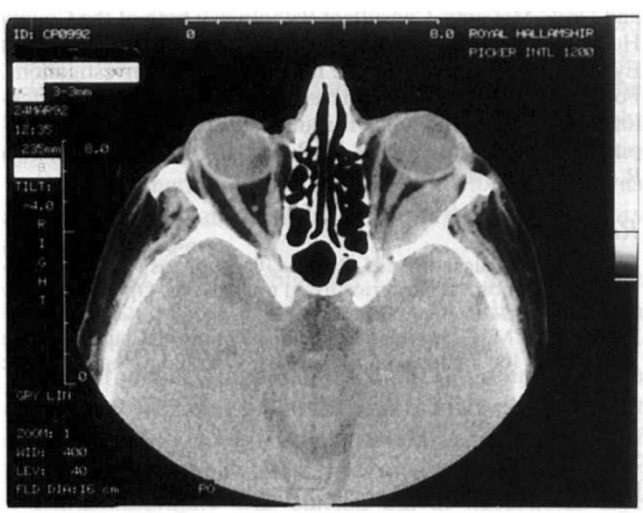

Fig. 1. *Computed tomography of the orbits, showing marked thickening of the left lateral rectus. Note the apparent thickening of the right medial rectus due to contraction of that muscle as the eye abducts.*

Ultrasound examination of the liver, to investigate the elevated liver enzymes, showed multiple hypoechoic areas suggestive of metastatic disease. Chest radiographs were normal. A biopsy of the enlarged left lateral rectus muscle was performed under local anaesthesia. At operation the muscle was found to be grossly thickened, pale and firm, with a gritty texture. The surrounding tissues appeared normal. Histology showed a small cell tumour infiltrating the muscle (Fig. 2). It was felt that this was most probably a metastasis from a bronchial tumour or a lymphoma. Immunohistochemical markers for the latter subsequently proved negative. Sputum cytology revealed the presence of tumour cells, and a diagnosis of oat cell tumour of the bronchus was made. Cytotoxic therapy was commenced, but the patient died 2 weeks later. A post-mortem examination was not carried out.

Discussion

Dysthyroid eye disease is the commonest cause of unilateral (and bilateral) proptosis in this age group.[8] The proptosis was painless, and the patient appeared to be well in other respects, with no prior history of malignant or inflammatory disease. Engorged vessels over the muscle insertion were considered consistent with the diagnosis of dysthyroid disease. The normal thyroid function tests were not inconsistent with this diagnosis, since 10–25% of dysthyroid ophthalmopathy occurs in euthyroid patients.[8]

The orbital CT scan was misleading in so far as it appeared to show involvement of the contralateral medial rectus (Fig. 1), supportive of a diagnosis of dysthyroid eye disease. However, it may be seen that the eyes were looking to the left during the examination, and the apparent thickening of the medial rectus is due to contraction of that muscle as it adducts the eye. The fusiform swelling of the lateral rectus did not involve the tendon, and such an appearance is typical of dysthyroid ophthalmopathy. Involvement of the horizontal recti in the absence of involvement of the vertical recti is, however, unusual for

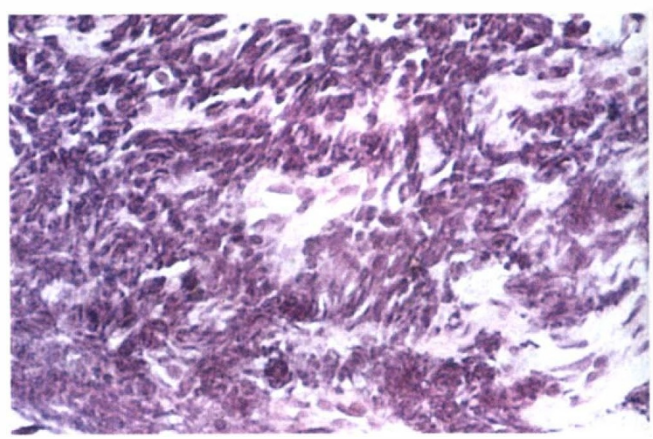

Fig. 2. *Histological appearance of the lateral rectus muscle biopsy, showing infiltration with small, densely staining cells. The 'smeared' effect is characteristic of oat cell neoplasms.*

dysthyroid ophthalmopathy.[9] Muscle thickening due to myositis usually does involve the tendon, but the lack of pain is inconsistent with this diagnosis since the condition is usually of acute onset and painful.[8] Extraocular muscles involved by tumours usually have irregular borders or areas of focal thickening on CT.[9,10]

Tumours of the lung are the second most common cause of metastasis to the eye and orbit, the most common being breast.[10–12] In previous reports[1–5] the orbital masses appeared to involve other orbital tissues, but in our case there was discrete infiltration of the lateral rectus muscle, as visualised at surgery. Biopsy of the involved muscle under local anaesthesia was straightforward, and considered to carry less morbidity than liver biopsy. The 'smudged' appearance of the biopsy on histology (Fig. 2) is typical of oat cell carcinoma. Sputum cytology was confirmatory, although the chest radiograph was still considered normal on review.

Metastatic carcinoma to the orbit is probably more common than the literature would indicate,[7] although discrete metastasis to an extraocular muscle is rare. This is the first report of oat cell carcinoma of the bronchus associated with a discrete metastasis to an extraocular muscle.

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Sir,

Acute Haemorrhagic Conjunctivitis Epidemic in the Dominican Republic

Between 6 and 8 August 1992 we examined 39 patients with acute haemorrhagic conjunctivitis (AHC)[1] in Santo Domingo, San Cristobal and Bani, Dominican Republic. The initial symptom of the conjunctivitis, which usually occurred 12–24 hours after coming into contact with an affected person, was described as a foreign body sensation. Within a few hours the conjunctival blood vessels were dilated and the eye was noticeably red, swollen, and tearing profusely. Bilateral eye infections were common (61%) in patients seen 0–3 days after the onset of AHC, and most (67%) reported initial infection of the left eye. Petechiae to consolidated blotches of intra- and subconjunctival haemorrhage were observed in the superior temporal half of the bulbar conjunctiva in most (77%) of the patients (Fig. 1). Frequently, the patients reported conjunctivitis in other family members (86%). Of the patients examined, only one had rhinitis and a mild sore throat in association with the AHC. A patient had secondary ocular complications after applying soap to the affected eye. None of the patients presented with or reported neurological abnormalities.

The first cases of the AHC epidemic were detected in the central region of the Dominican Republic at Bonao in the middle of June 1992. Subsequently patients with conjunctivitis were seen from Puerto Plata in the north to El Limonar and Santo Domingo in the south. Hundreds of patients with AHC were seen at the rural clinic of Dr. Elias Santana in Los Al Carrizos and in prisons north of Santo Domingo during July.

The outbreaks of haemorrhagic conjunctivitis in Panama in May, the explosive epidemic in the Dominican Republic in June and the similarity in signs and symptoms of the conjunctivitis in patients in each epidemic suggests that the AHC may have been transported from Panama. AHC is caused either by enterovirus type 70 (EV70) or a variant of coxsackievirus type A24 (CA24v). The eye disease appeared to be similar to AHC caused by EV70. This clinical impression is based upon the absence of upper respiratory tract symptoms that are usually observed in patients with AHC caused by CA24v. Further, our difficulty in isolating virus from tears is consistent with pre-

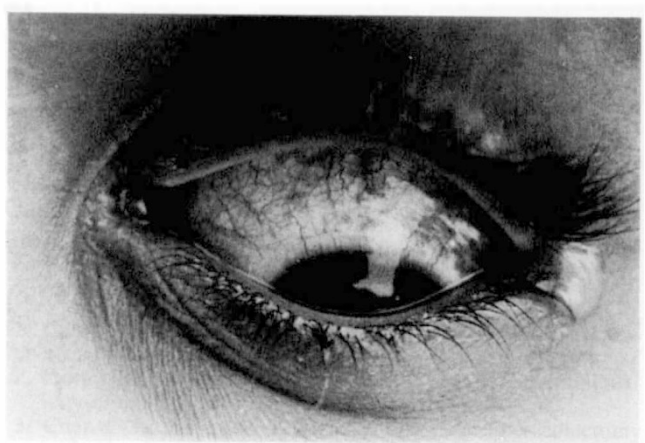

Fig. 1. *The left eye of a patient showing signs of AHC about 24 hours after infection. Note the dilation of the bulbar conjunctival blood vessels, the petechial haemorrhages associated with the blood vessels in the bulbar conjunctiva and the blotch of haemorrhage in the temporal quadrant of the superior bulbar conjunctiva. Note also the abundant tear fluid and mucus discharge.*