Sir,

**Unilateral Orbital and Bilateral Ocular Involvement in Presumed Metastatic Bronchogenic Carcinoma**

A 52-year-old man was referred to the ophthalmology service from the oncology department because of bilateral vision loss. He had progressive weight loss, chest pain and cough for the previous 3 months. Visual deterioration began to develop at about the same time as his systemic symptoms. The patient still had useful vision until 1 week prior to his admission to the hospital, when his visual acuity suddenly dropped to hand movements. He underwent a full systemic examination. Computerized chest tomography showed a right hilar mass occluding the right main bronchus and bilateral multiple nodules at the periphery of both lungs (Fig. 1). Histopathological diagnosis after lung biopsy was undifferentiated squamous cell bronchogenic carcinoma.

Visual acuity was hand movements in both eyes. Mobility of the right eye was limited in all directions of gaze. Increased resistance to retropulsion was noted on the right side. There was a 10 mm non-axial proptosis on the right and a 2 mm axial proptosis on the left as measured with the Hertel exophthalmometer. Corneal sensation was reduced on the right and there was punctate epithelial keratitis due to exposure. Slit-lamp biomicroscopy revealed hypopyon and central anterior and posterior subcapsular cataract in both eyes (Fig. 2). There was massive vitreous infiltration and this was presumed to be with tumour cells. The pupils in either eye did not react to light. The fundus was barely visible through the lens and vitreous opacities and details were not discernible.

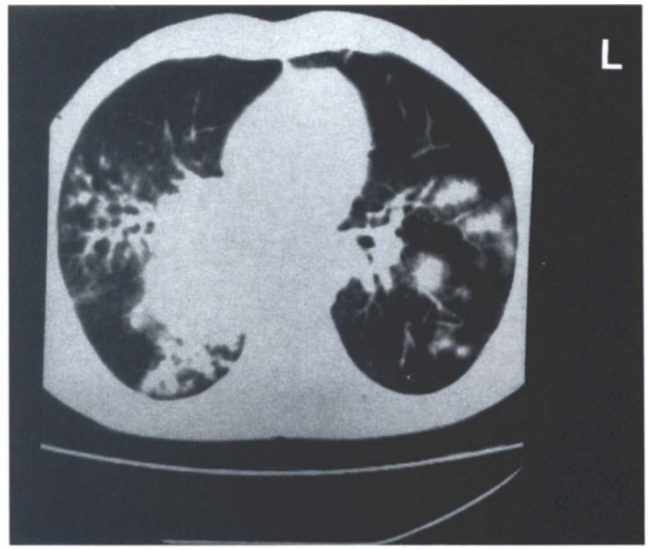
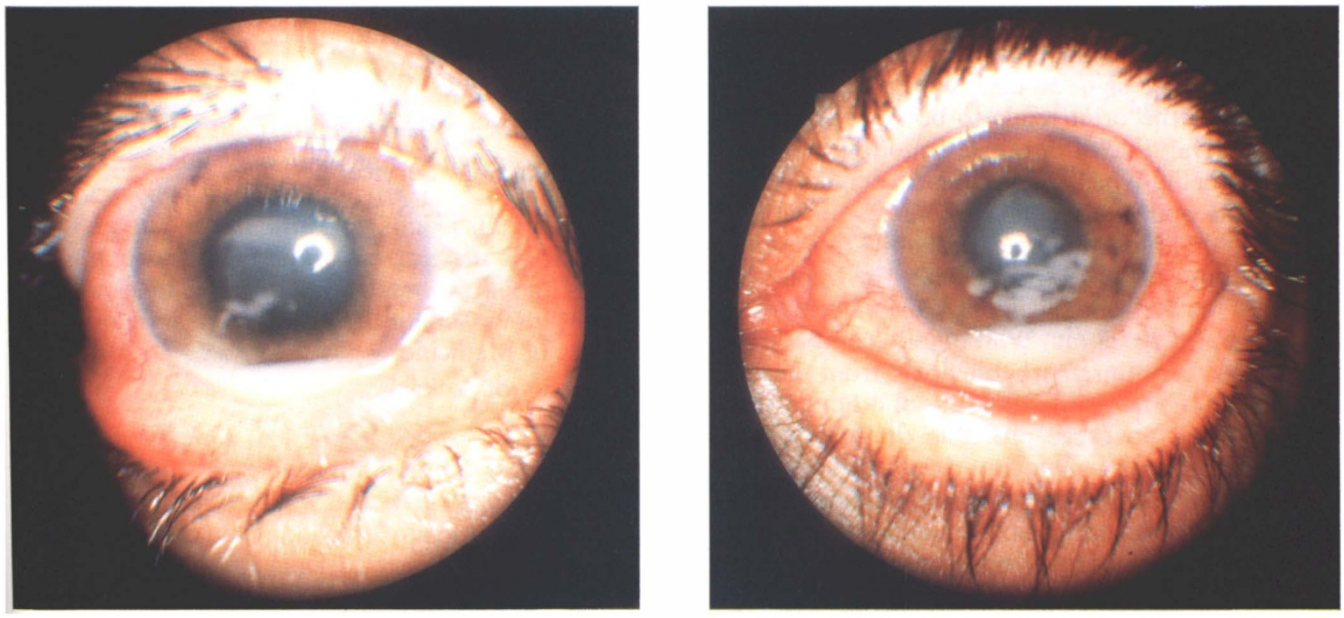


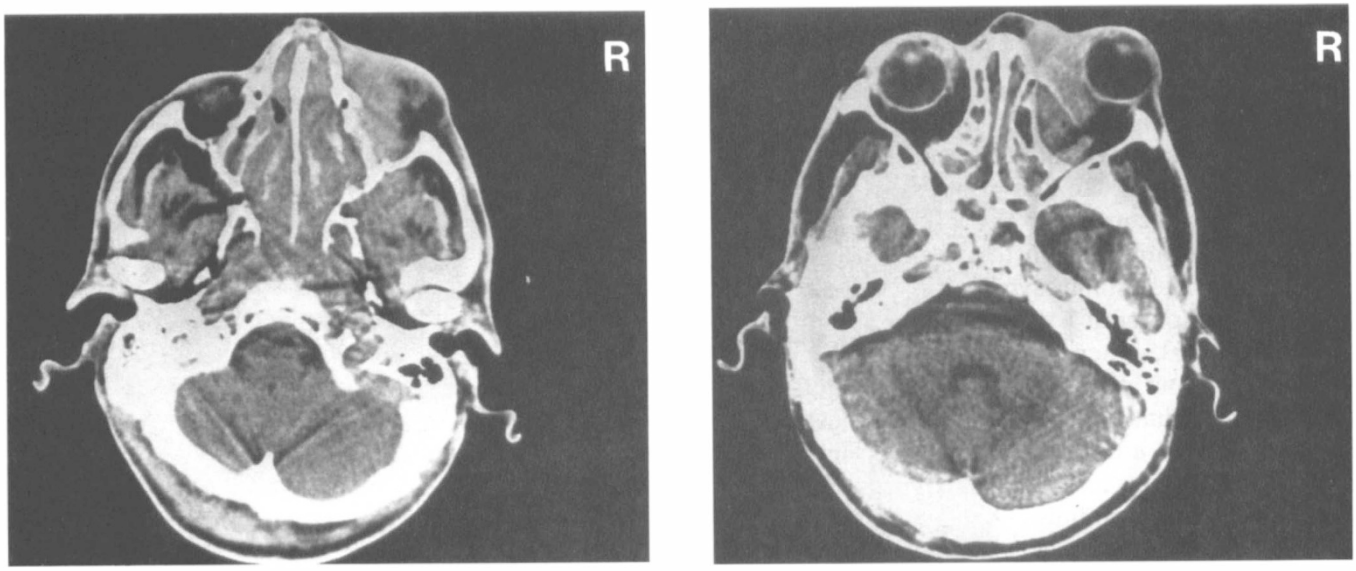

**Fig. 1.** *Axial CT image below the carina reveals a right hilar mass occluding the right main bronchus. Also noted are the multiple peripheral lung nodules.*

Ultrasonography revealed a highly reflective mass with an irregular internal structure in the right orbit which was presumed to be a metastasis. Ultrasonic examination of the left orbit was normal. Computerized tomography demonstrated a soft tissue mass filling the nasal cavity and nasopharynx (Fig. 3a) and the medial aspect of the right orbit (Fig. 3b). The patient refused anterior chamber paracentesis or vitreous aspiration for cytological diagnosis. An incisional orbital biopsy through the right skin crease was performed. Histopathological investigation showed malignant cellular elements but the tissue biopsy was too poorly differentiated to confirm its origin.



(a) (b)

**Fig. 2.** *(a) Right eye: hypopyon, cataract and conjunctival chemosis due to proptosis. (b) Left eye: hypopyon and cataract.*




(a) (b)

**Fig. 3.** *(a) Axial CT image through the nasopharynx showing the soft tissue mass filling the nasal cavity and nasopharynx. (b) Axial CT image through the level of bulbus oculi depicting the soft tissue mass in the medial aspect of the right orbit.*

The patient had enrolled into the hospital in the terminal stage of his disease. Chemotherapy was initiated but he died 2 weeks after admission to the hospital, approximately 3.5 months after the onset of his complaints. Permission for autopsy was refused.

*Discussion*

Metastatic tumours of the orbit occur less frequently than intraocular metastasis. The relative frequency of intraocular metastases to orbital metastases ranges from 1:1 to 8:1.[1] Bronchogenic carcinoma is the second most common metastatic orbital tumour after breast carcinoma.[2] In some studies, however, bronchogenic carcinoma has been reported to occur less frequently.[1] Orbital metastasis in lung carcinoma can be the first sign of disease. Lung carcinoma metastatic to the orbit tends to be very aggressive, with a survival time of only a few months.[1]

Though definitive histopathological diagnosis from the orbital and intraocular lesions could not be obtained, the reported case probably represented simultaneous orbital and ocular invasion and bilateral ocular involvement from metastatic bronchogenic carcinoma. Whole-body computerized tomograms were unremarkable apart from the lung lesion and, together with the results of other ancillary tests, revealed no other probable origin for metastatic tumour.

There have been several case reports documenting metastasis of bronchogenic carcinoma to anterior segment, retina, choroid, optic nerve and orbit.[3] Simultaneous ocular and orbital metastasis from bronchogenic carcinoma is, on the other hand, extremely rare and has been reported only twice previously.[3,4] Bilateral ocular metastasis occurs in 20-25% of patients with metastatic ocular tumours.[5] However, bilateral massive vitreous infiltration and hypopyon, as probably demonstrated in our case, is rare in carcinoma metastatic to the eye.

Bilateral orbital metastasis has previously been reported to occur with breast carcinoma, carcinoid syndrome and neuroblastoma but not with lung carcinoma.[6] It is possible that the reported case also had left orbital or optic nerve metastasis, but these deposits were too small to be clinically detectable at the time of the examination.

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Sir,

**Simultaneous Presentation of Pineal Germinoma and Testicular Seminoma**

The most common pineal tumours are germ cell tumours, parenchymal cell tumours and glial tumours. They usually present with clinical features of increased intracranial pressure and dorsal midbrain syndrome. This syndrome is due to compression either by the pineal mass or by a dilated third ventricle associated with hydrocephalus. Other causes include infarction, multiple sclerosis, arteriovenous malformation and infection.[1]

About 95% of all testicular tumours are of germ cell type; seminoma represents almost 50% of all cases. The mortality rates are declining because of early detection and major advances in treatment through the combinations of surgery, radiotherapy and chemotherapy.[2]

We report a patient who presented with a dorsal midbrain syndrome and papilloedema caused by a pineal tumour. He was also found to have a right testicular mass. The pineal neoplasm proved to be a germinoma and the testicular one a seminoma. We suggest that they were independent primaries and, to our knowledge, this is the first reported example of simultaneous presentation of almost identical germ cell tumours at these sites. We draw attention to the importance of excluding associated extracranial germ cell neoplasms in patients with similar pineal lesions.

*Case Report*

A 21-year-old man presented to the eye casualty department after a minor deceleration head injury 3 weeks previously. He complained of headaches, horizontal diplopia, nausea, vomiting and blurred vision. He had had a strabismus operation as a child. Systemic examination revealed a hard irregular right testicular mass. There were no other systemic abnormalities.

On ophthalmic examination, visual acuity was 6/9 part (+2.5 DS) in the right eye and 6/6 (+2.5 DS/+0.5 DC at 180°) in the left eye. Pupillary reflexes and visual fields were normal. Ocular motility examination demonstrated a right exotropia of 35/45 prism dioptres and restrictive upgaze eye movements. Fundoscopy disclosed bilateral papilloedema. Ophthalmic and neurological examinations were otherwise normal.

A CT brain scan with contrast showed a large pineal mass with diffuse contrast enhancement and areas of calcification (3.8 × 3 cm in maximum transverse diameters). It was associated with obstructive hydrocephalus with dilatation of the third and lateral ventricles (Fig. 1a). Ultrasound examination of the right testis demonstrated a 3.5 cm mass with the appearance of a seminoma at the upper pole. CT scans of chest and abdomen were normal. Blood tests showed increased rouleaux with reactive neutrophilia; alpha-fetoprotein and beta-chorionic gonadotrophin levels were normal. His hydrocephalus was treated with a ventriculo-peritoneal shunt. A stereotactic biopsy of the pineal mass showed a germ cell tumour histologically. He then underwent a subtotal resection of the pineal tumour through a suboccipital supratentorial approach and the right testis was removed.

The testicular tumour, which measured 4 × 3 × 3 cm, consisted microscopically of two main cell types. Most abundant were masses of large cells with pale staining, often vacuolated cytoplasm and large, central, rounded nuclei containing a prominent nucleolus. The connective tissue stroma around these cell groups was focally infiltrated by lymphocytes (Fig. 2a). The features were typical of a seminoma. The tissue received from the pineal mass had the appearances of a germinoma, and was histologically very similar to the testicular lesion (Fig. 2b), although lymphocytes were relatively scanty.

Post-operatively, the patient had a course of chemotherapy consisting of bleomycin, etoposide and carboplatin. During the first induction dose he developed neutropenic *Escherichia coli* septicaemia and was successfully treated with intravenous antibiotics. The chemotherapy caused profound anaemia, agranulocytosis and thrombocytopenia, but he responded well to packed cells and platelet transfusions.

At 8 months he had a full range of eye movements, an esotropia of 10 prism dioptres for near and 16 prism dioptres for distant and a right hypotropia of 4 prism dioptres.

Magnetic resonance imaging of the brain was performed 8 months post-operatively; it showed a small residual pineal mass (1.5 cm in anteroposterior diameter, 1 cm transversely and 7 mm in height); the left posterior parietal shunt was in position and the ventricles remained decompressed (Fig. 1b). The