Sir,

Metastatic Colonic Adenocarcinoma of the Orbit with Intraneural Extension from the Brow to the Brainstem

We report a patient with colonic adenocarcinoma who developed a solitary metastasis to the supraorbital nerve which was later associated with retrograde intraneural extension into the cavernous sinus, trigeminal ganglion and brainstem. The extent of the tumour was partially revealed by CT, the true extent becoming evident with MRI scanning. This appears to be the first reported case of metastatic adenocarcinoma of the orbit with retrograde intraneural extension to the intracranial activity.

Case Report

A 69-year-old woman presented to her ophthalmologist with a 3 month history of left supraorbital pain and hypoaesthesia, left-sided headache and variable left upper lid swelling. On initial examination she had left upper lid swelling and sensory loss in the ophthalmic division of the trigeminal nerve. Systemic enquiry revealed malaise, anorexia and weight loss during this period. Six years previously she had undergone an anterior resection for a Duke's stage B sigmoid adenocarcinoma without recurrence.

Over the following 3 months she also developed increasing left-sided proptosis, diplopia due to a progressive left sixth nerve palsy, and a reduced left visual acuity of 6/12 with a relative afferent pupillary defect. A CT scan of the brain and orbits, performed locally, was deemed normal and she was referred for further investigation. Three weeks prior to referral she developed severe pain and hypoaesthesia in the region of the left cheek, left upper teeth and gums, and the left side of the nose.

On examination, Snellen acuities were 6/6 right and 6/12 left with a left relative afferent pupillary defect. Ocular movements were severely restricted on the left due to a complete sixth, and partial third and fourth nerve palsies. The left corneal reflex was normal despite marked cutaneous hypoaesthesia in the ophthalmic and maxillary divisions of the left trigeminal nerve. She had prominent upper lid swelling and 3 mm of relative ptosis with levator function reduced to 10 mm. A firm, fixed mass was palpable in the supero-nasal quadrant of the orbit, lying in the region of the supraorbital nerve, causing 3 mm of axial proptosis and 1 mm of inferior displacement of the left globe. There were choroidal folds and mild optic disc hyperaemia on fundal examination. The right globe and orbit were entirely normal and systemic and neurological examinations were otherwise unremarkable.

A contrast-enhanced CT scan revealed a mass in the supero-nasal quadrant of the left orbit, in the region of the superior rectus/levator complex (Fig. 1), and no intracranial abnormality. Blood screening was unremarkable with an ESR of 12 mm.

At anterior orbitotomy, the supraorbital nerve was found to be diffusely enlarged to the superior orbital fissure and resected in its entirety. The superior rectus/levator complex, although also enlarged, was not directly involved and a biopsy of the levator muscle was taken. All the other orbital contents, including the lacrimal gland, were normal.

The specimens revealed intraneural invasion of the supraorbital nerve by dense fibrous elements and poorly differentiated cells, positive for glandular epithelial marker CAM 52 (Fig. 2). The levator muscle showed a non-specific inflammatory reaction without malignant invasion.

Post-operatively, over a period of 6 weeks, the patient developed pain in the mandibular division of the trigeminal nerve, complete third, fourth and sixth cranial nerve palsies, and a deterioration in visual acuity to finger counting. A contrast-enhanced CT scan showed a mass in the left cavernous sinus (Fig. 3a) and AT1-weighted contrast MRI scan revealed, in addition, involvement of the trigeminal ganglion and brainstem (Fig. 3b). She underwent palliative radiotherapy and died 6 months later.

Comment

Metastatic orbital tumours account for 10% of orbital malignancies, colonic adenocarcinoma accounting for only 5% of these,[1,2] and involve other orbital contents by direct spread. Perineural

Fig. 1. *Pre-operative coronal CT scan showing a mass in the region of left superior rectus/levator complex (arrow).*

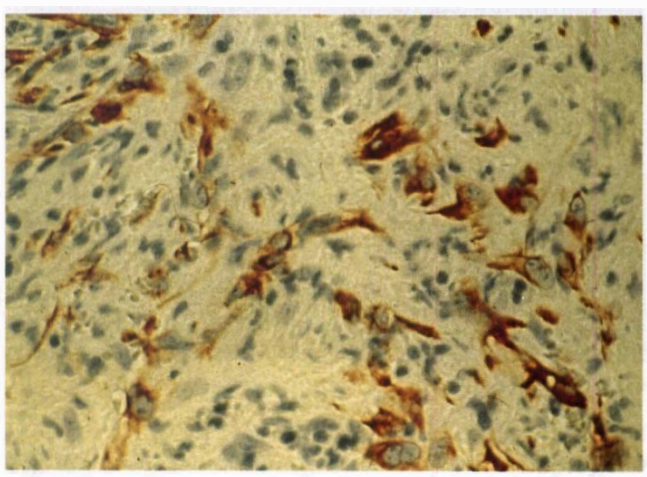

Fig. 2. *Section through the supraorbital nerve. Tumour cells showed positive staining for CAM 52.*

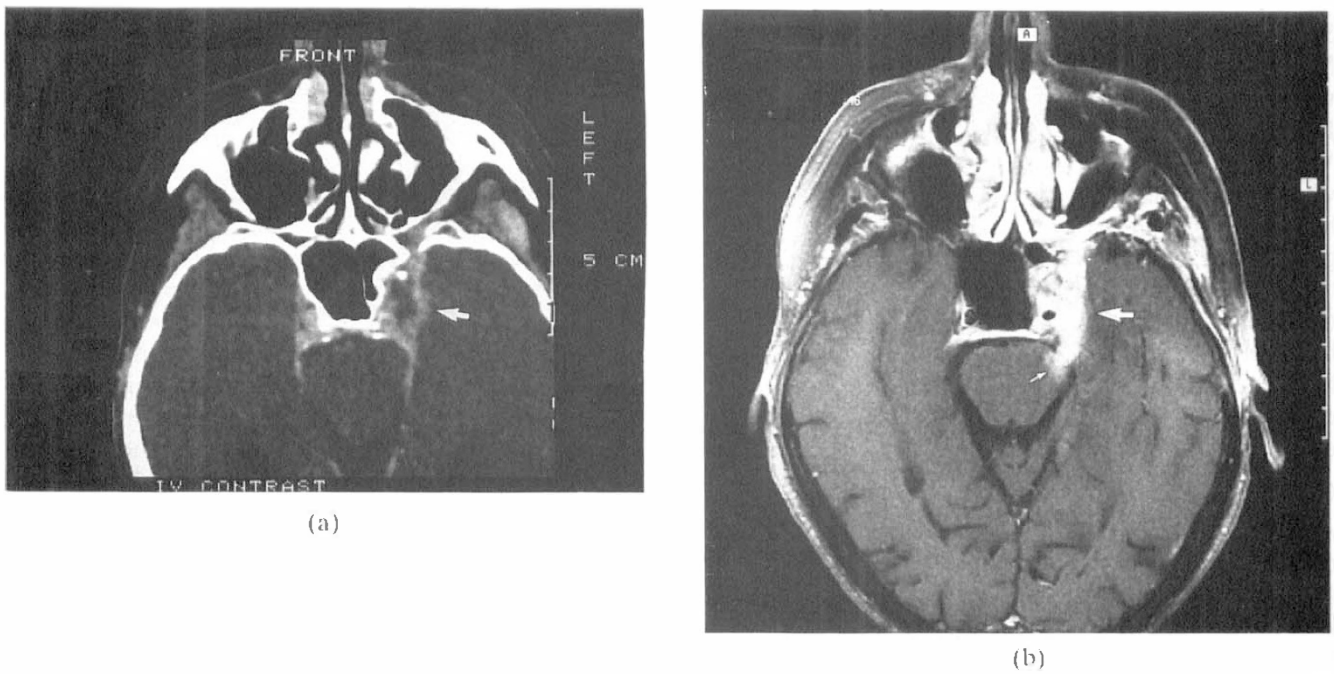

Fig. 3. *(a) Contrast-enhanced CT scan showing an abnormal mass in the left cavernous sinus (arrow). (b) A contrast-enhanced MRI scan shows additional involvement of the trigeminal ganglion and brainstem (small arrow).*

tumour spread from the orbit to the cranial cavity has been directed in cases of primary lacrimal malignancies[3] and in squamous and basal cell carcinomas arising on facial skin.[4,5]

Intraneural extension of a secondary adenocarcinoma from the orbit into the intracranial cavity has not previously been described. In our patient an orbital metastasis from a colonic adenocarcinoma extended by intraneural spread, through the supraorbital and frontal nerves, into the cavernous sinus and subsequently to the trigeminal ganglion and brainstem. The clinical picture, initially one of an orbital lesion with supraorbital nerve signs, evolved into a superior fissure syndrome and finally into a lesion affecting the trigeminal ganglion and brainstem. This sequence was supported by radiographic imaging, where MRI revealed the true extent of the tumour, previously not shown by CT scanning.

MRI scanning is a valuable adjunct to CT in delineating the extent of tumour spread in patients with malignant orbital lesions where extensive intracranial involvement is suspected on clinical grounds.

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Sir,

Bilateral Panuveitis in a Patient with Colonic Adenocarcinoma and *Streptococcus milleri* Liver Abscesses

Bilateral panuveitis in the elderly necessitates investigation, in particular to exclude ocular neoplasms such as lymphoma (formerly reticulum cell sarcoma). The association, however, is rare and in a recent series of 60 patients[1] no evidence of intraocular tumour was found. We present the case of an elderly man with bilateral panuveitis, colonic adenocarcinoma and *Streptococcus milleri* liver abscesses. We speculate that the panuveitis was due to metastases from the bowel tumour although no definitive histopathological evidence was available.