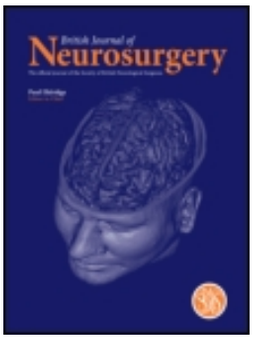

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SHORT REPORT

Recurrent ectopic craniopharyngioma

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Abstract
A 66-year-old woman developed an asymptomatic mass in the right frontal lobe 5 years after undergoing a right frontal craniotomy and removal of a craniopharyngioma. The mass progressively enlarged over the next 3 years, during which time it became multiloculated and partially cystic. Repeat craniotomy was performed 8 years after the original operation, at which time the mass was found to be an ectopic craniopharyngioma. The lesion probably resulted from seeding of tumour cells along the surgical tract at the time of the initial surgery.

Key words: *Craniopharyngioma, ectopic seeding, recurrent tumour.*

Case report

A 66-year-old woman developed progressive headache, dizziness and loss of short-term memory. Magnetic resonance imaging (MRI) showed hydrocephalus associated with a mass in the anterior portion of the third ventricle (Fig. 1), and the patient was referred to the Johns Hopkins Hospital. On admission, a neurological examination revealed no focal deficits. Ocular examination revealed visual acuity of 6/12 in both eyes and bitemporal field defects to confrontation testing. The patient was able to recognize correctly the figures on seven of 10 Hardy–Rand–Rittler (HRR) colour plates with both eyes. Both optic discs appeared normal.

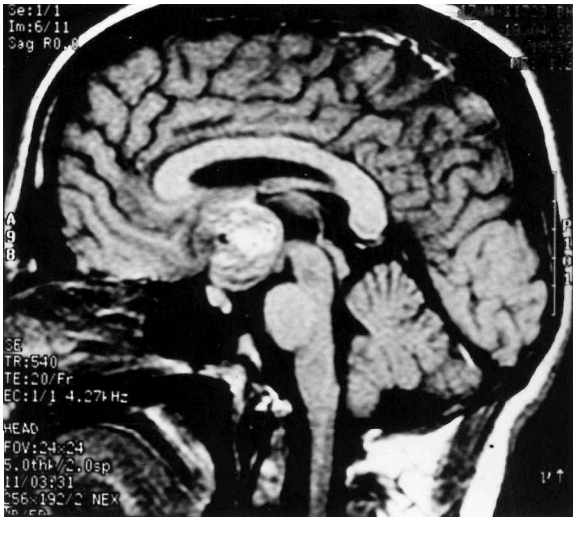

FIG. 1. Sagittal MRI showing initial appearance of suprasellar mass.

The following day, the patient underwent a right frontal craniotomy and transcallosal removal of the tumour, which proved to be a craniopharyngioma. The patient's postoperative course was complicated by diabetes insipidus, diabetes mellitus and gastrointestinal haemorrhage following anticoagulation for a deep-vein thrombosis. She eventually recovered, however, with return of visual acuity to 6/6 in both eyes, resolution of the bitemporal field defect, and improvement in colour vision to correct recognition of nine of 10 HRR plates. She then did well until 5 years later, when MRI demonstrated an enhancing lesion beneath the bone flap from the previous craniotomy (Fig. 2). Because the patient had no focal neurological or visual deficits, it was elected to continue to follow her clinically and with serial MRI. The lesion initially showed only a small increase in size (Fig. 3); however, by 8 years after the initial surgery, the lesion had increased significantly in size (Fig. 4). Although the patient had no focal neurological or visual deficits, it was elected to perform a right frontal craniotomy for diagnosis and treatment.

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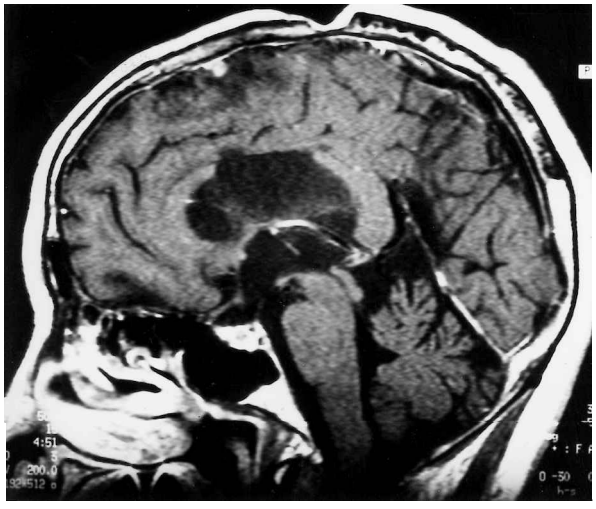

FIG. 2. Sagittal MRI performed 3 years after surgery shows small, enhancing, dural-based nodule beneath the bone flap.

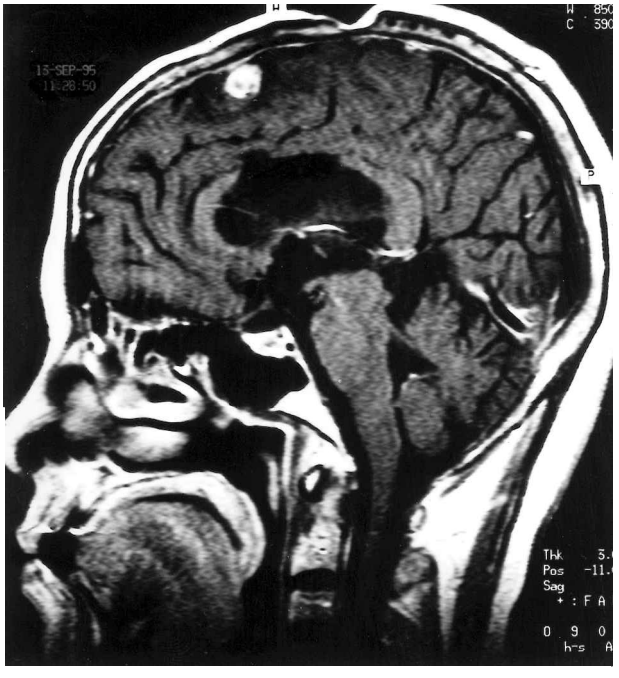

FIG. 3. Sagittal MRI performed 5 years after surgery shows enlargement of nodule.

At the time of craniotomy, a well-circumscribed mass was identified between the dura and the right frontal lobe, but easily separable from both. The lesion was partially cystic and contained dark-coloured, thick fluid. It was completely removed. Histopathological examination of the specimen demonstrated that it was a craniopharyngioma (Fig. 5).

Discussion

Craniopharyngiomas are benign lesions that usually occur in the suprasellar region. They usually do not metastasize or spontaneously seed the cerebrospinal fluid; however, they are locally invasive and often

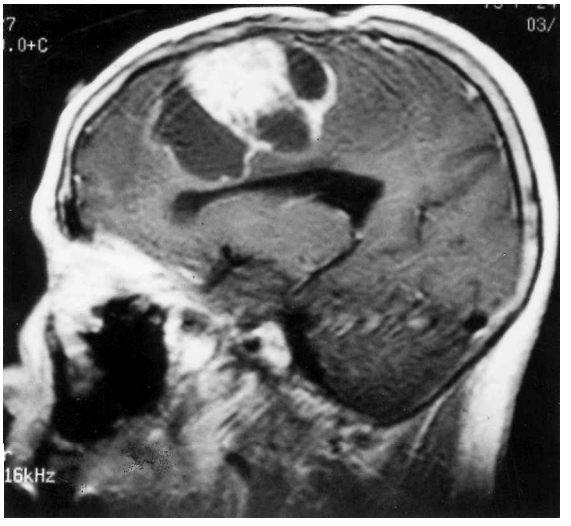

FIG. 4. Sagittal MRI performed 8 years after surgery shows marked enlargement of mass. Note the the lesion now has a multiloculated, cystic appearance combined with a solid, enhancing component.

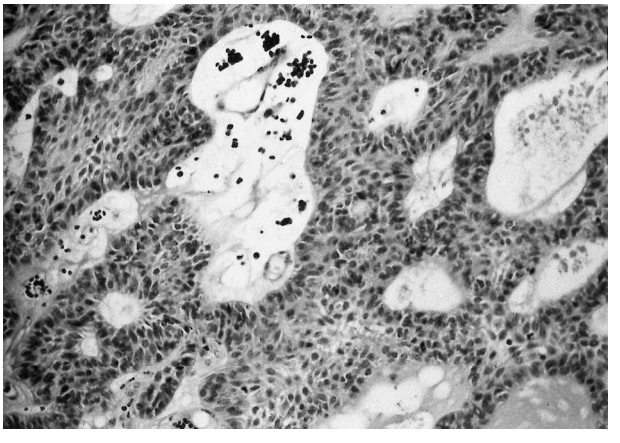

FIG. 5. Histopathological appearance of resected lesion shows features consistent with a craniopharyngioma (× 75).

very adherent to surrounding tissues, making complete resection difficult. Thus, local recurrences are not uncommon. In addition, seeding of the central nervous system (CNS) can occasionally occur during removal or aspiration of the lesion, producing ectopic recurrences along the previous surgical or aspiration tract[1–6] or even along the spinal cord.[7] In our case, the ectopic recurrence occurred along the probable surgical tract. It thus appears that residual squamous cells from a craniopharyngioma left along a surgical or needle tract have the potential to implant and multiply, eventually causing a recurrent mass. It remains unclear what factors give rise to an ectopic recurrent craniopharyngioma, but it may be assumed that in most cases, some tumour cells remain following gross total removal of a craniopharyngioma.

The optimum management of craniopharyngiomas is somewhat controversial. Although radical resection

has a role as the sole therapeutic modality in some instances, the majority of patients can be managed appropriately by a subtotal resection followed by adjuvant external-beam radiotherapy to the involved field using three-dimensional treatment planning.[8] In addition, stereotactic radiosurgery may be of benefit in treating residual or recurrent craniopharyngioma,[9] although there are no long-term data. Finally, intracavitary irradition as well as intracavitary and systemic chemotherapy have been used in selected cases with promising results.[8] It remains to be seen whether or not such treatment will affect the potential for seeding of craniopharyngiomas.

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