Spontaneous Resolution Of Hydrocephalus Associated With Haemorrhagic Craniopharyngioma

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Citation

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Abstract

Objectives: To report a unique case of successful conservative management of hydrocephalus due to craniopharyngioma.

Case: An 85 year old man with two weeks of progressive visual loss. CT showed a cystic suprasellar mass with calcification diagnostic of craniopharyngioma. A short period of observation resulted in improvement of symptoms and resolution of both the cyst and associated hydrocephalus. The cyst represented acute haemorrhagic expansion which subsequently settled.

Conclusions: This rare entity should be considered and in this case justifies a short period of conservative management in the context of a patient with a stable deficit, especially in the context of hydrocephalus where a minor decrease in lesion size might allow complete resolution of the symptoms.

INTRODUCTION

Spontaneous intracranial haemorrhage into space-occupying lesions is well documented occurring in 5.1% of all brain tumours (1) however spontaneous intratumoral haemorrhage into craniopharyngioma is rare, with only eleven cases reported. The authors present a case of resolved spontaneous haemorrhage into craniopharyngioma with resolution of hydrocephalus in an 85 year old man after improvement in his clinical symptoms.

CASE REPORT

An 85-year-old man presented with one week of progressive worsening mobility. At the time he denied headache, nausea, vomiting or visual disturbance. On examination he was found to have MRC grade 4/5 weakness of the right arm and leg. Cranial nerves were normal and visual fields were intact to confrontation.

CT scan showed a heavily calcified suprasellar lesion consistent with craniopharyngioma, with a slightly hyperdense, well defined portion extending superiorly through the third ventricle and abutting the Foramen of Monroe and associated dilation of the left lateral ventricle (figure 1). MRI was contraindicated as the patient had an implanted pacemaker.

He was referred for an urgent neurosurgical opinion. When seen a week later the patient described in addition reduced visual acuity in both temporal fields. Examination was unchanged and there was no papilloedema. Goldman perimetry was normal. A diagnosis of compartmental hydrocephalus due to enlarging craniopharyngioma was made and the patient was scheduled for ventricular endoscopy with a planned septostomy, possible cyst fenestration and ventriculo-peritoneal shunt placement one week later.

On admission for the planned surgery the patient reported visual improvement in the two days prior to admission. At this time formal visual examination found visual acuity of right eye 6/24 and left eye 6/12. No opthalmological cause for visual field defect or reduced vision was found.

A repeat CT scan was performed due to the spontaneous improvement in the patient's symptoms. This showed a decrease in the size of the third ventricular component and complete resolution of the hydrocephalus (figure 2). At this time the patient did not have any residual impairment of mobility and he reported continued spontaneous improvement in his visual acuity.

A diagnosis of resolved spontaneous haemorrhage into craniopharyngioma was postulated. In the early phase the haemorrhagic component was sufficient to cause hydrocephalus, but this settled as the haematoma resolved. The patient was discharged without surgery and remains

stable at four months.

DISCUSSION

Spontaneous intracranial haemorrhage into space-occupying lesions is well documented occurring in 5.1% of all brain tumours (1). Pituitary apoplexy is the most common haemorrhage into tumour occurring in anywhere between 0.6-15.8% of all pituitary adenomas (1, 2, 3). Pituitary apoplexy presents most commonly with headache and acute visual change (2, 3, 4). The lack of headaches in the present case therefore make the diagnosis clinically less likely.

Spontaneous intratumoral haemorrhage into craniopharyngioma is rare, with only eleven cases reported. The cause of haemorrhage into craniopharyngiomas has been postulated to be the mechanical distortion of the vessels adjacent or within the tumour itself (5, 6). The majority of reported haemorrhages have been associated with CSF diversion, trauma or prior surgery, factors absent in this case.

Hydrocephalus after pituitary apoplexy is well recognised, especially with a large suprasellar lesion or if the haemorrhage extends into the subarachnoid space via the suprasellar cistern (7). In this case there was neither radiological nor clinical evidence of subarachnoid haemorrhage, but the lesion was large enough to obstruct the left foramen of Munroe. The surgical plan involved CSF diversion and possibly removal of CSF obstruction via fenestration of what was assumed to be a cystic craniopharyngioma. However the obstruction of the CSF outflow from the lateral ventricle resolved with the involution of the postulated haematoma.

Spontaneous regression of a pituitary adenoma after apoplexy is documented: Armstrong et al describe a case of pituitary apoplexy post coronary angiography treated with steroids with rapid improvement (8). CT findings in cases of haemorrhage into pituitary adenoma show acute enlargement of tumour and increased attenuation (8, 9). In this case the hyperdensity of the cyst at presentation was compatible with the CT findings in craniopharyngioma cysts, which are typically higher density than most tumour-associated cysts due to the presence of cholesterol granules. On reviewing the presenting CT scan we found the cyst has Hounsfield units of 45, comparable with those measured in subacute (resolving) haematomas (10).

CONCLUSION

A unique case of a postulated haemorrhage into craniopharyngioma is presented. The use of MRI imaging, in patients able to undergo the procedure, would confirm or deny the presence of haemorrhage and to help guide management. The spontaneous improvement in the patient's symptoms justifies conservative management in this case as with patients with similar perichiasmal pathology, the most common being pituitary apoplexy. It is fortuitous in this case the described patient was reassessed prior to surgery and as such clinicians should be aware of this rare entity and to differentiate it from a classical, non-resolving craniopharyngioma cyst that would be more likely to require surgical management.

Figure 1

axial non contrast CT scan at presentation showing A) calcified suprasellar mass, B) well defined, isodense component of this mass in the lower aspect of the third ventricle with Hounsfield units of 43. C) dilation of the left lateral ventricle.

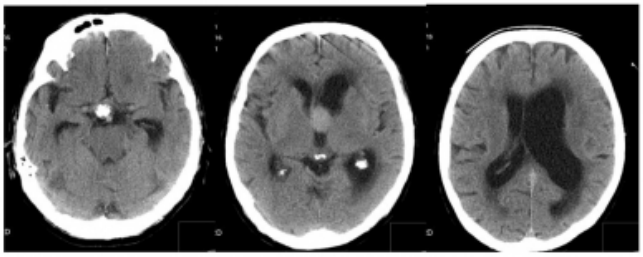
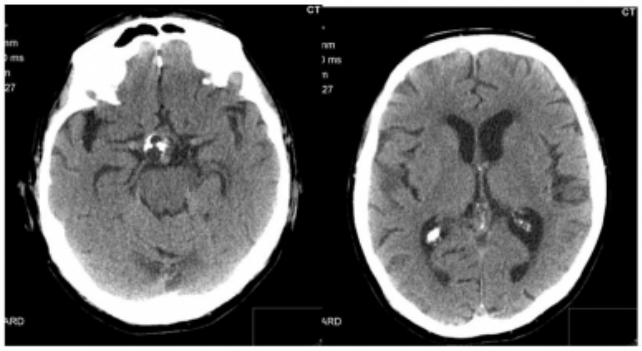


Figure 2

axial CT scan one week later following spontaneous improvement of symptoms showing A) Suprasellar calcified mass which is unchanged, however the isodense third ventricular mass is not visible. B) lateral ventricular size has returned to normal due to resolution of the mass.



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