

Unusual presentation of more common disease/injury

A diagnostic dilemma of intracranial pathology: coincidence or the result of cranial trauma?

Georgina Cartwright,¹ B M W Bailey,² R J M Lane,³ A Messiha⁴¹ Department of Oral and Maxillofacial Surgery, Kingston Hospital, Westminster, London, UK² Department of Oral and Maxillofacial Surgery, Ashford Hospital, Westminster, London, UK³ Department of Neurology, Ashford Hospital, Westminster, London, UK⁴ Department of Oral and Maxillofacial Surgery, Royal Surrey County Hospital, Surrey, UK

Correspondence to Georgina Cartwright, georgey37@hotmail.com

Summary

A 21-year-old man presented to the accident and emergency department at St Peter's Hospital, London, in September 2008. Following consumption of alcohol, the patient had been assaulted and had experienced facial trauma. Later, the patient had a witnessed generalised tonic-clonic seizure and the next day noted weakness of the right leg.

A CT scan of the brain revealed a solitary lesion in the left presylvian region close to the vertex, involving the leg area of the primary motor cortex. A subsequent MRI scan showed the lesion to be a cavernous haemangioma.

The patient had no history of epilepsy. This raised the question as to whether the assault caused the lesion to haemorrhage, resulting in the seizure and spastic monoparesis, or did the formerly asymptomatic cavernoma bleed spontaneously with the assault being coincidental?

BACKGROUND

This patient posed an interesting diagnostic dilemma. Was the intracranial pathology the cause or the result of the head injury?

The case incorporated the specialities of neurology, maxillofacial surgery and radiology, highlighting the importance of a multidisciplinary approach to unexpected symptoms and signs. It also raised the question of how many 'alcoholic collapses' are properly investigated, based on the history. In a busy Accident and Emergency department (A&E) a large number of patients present having consumed excessive amounts of alcohol, and a significant proportion may have been assaulted, sustained mechanical falls or had a head injury. This case was unusual in that an unexpected symptom developed as a result of pathology affecting a specific anatomical region of the brain. It was certainly a very unusual case to encounter in a maxillofacial clinic.

CASE PRESENTATION

A 21-year-old man, previously fit and well, experienced facial injuries in an alleged assault one evening, having consumed about eight units of alcohol previously. About 45 min later the patient had a tonic-clonic seizure at a bus stop, witnessed by his girlfriend. The patient then walked home. The following day the patient had a headache and noticed weakness of his right leg. That evening the patient attended the A&E department.

The initial neurological examination was unremarkable and his Glasgow coma scale score was 15/15. The patient was referred to the maxillofacial service for management of facial injuries.

Facial fractures were excluded and no maxillofacial surgical intervention was required. However, the examining surgeon noted spastic weakness of the right leg, with hyperreflexia and a positive Babinski sign. There were no sensory

abnormalities. The remainder of the neurological examination was normal.

An uncontrasted CT brain (figure 1) revealed a solitary lesion in the left presylvian region. A subsequent brain MRI (figure 2) showed the lesion to be a cavernous haemangioma (cavernoma) measuring approximately 10 mm in diameter, with evidence of previous haemorrhage. There was no restricted diffusion on diffusion weighted imaging, suggesting that the haemorrhage was confined. No treatment was required.

INVESTIGATIONS

Facial view radiographs, a CT scan of the brain and subsequent MRI scan were performed. The patient also underwent electroencephalography (EEG).

TREATMENT

Conservative management. No treatment was required.

OUTCOME AND FOLLOW-UP

A subsequent EEG showed no abnormality. By 1 month later, the spasticity was improving and the patient had had no further seizures.

DISCUSSION

Cavernous haemangiomas are benign vascular lesions that are usually congenital but can develop de novo within the central nervous system and in other organs.¹ The main neurological manifestations are seizures and haemorrhage, although many are asymptomatic.²⁻³ They are characterised pathologically by abnormally enlarged capillary cavities without intervening normal brain parenchyma.⁴ The prevalence is 0.02% to 0.5% of all haemangiomas and 70% of these lesions occur in the supratentorial region.¹ Had the

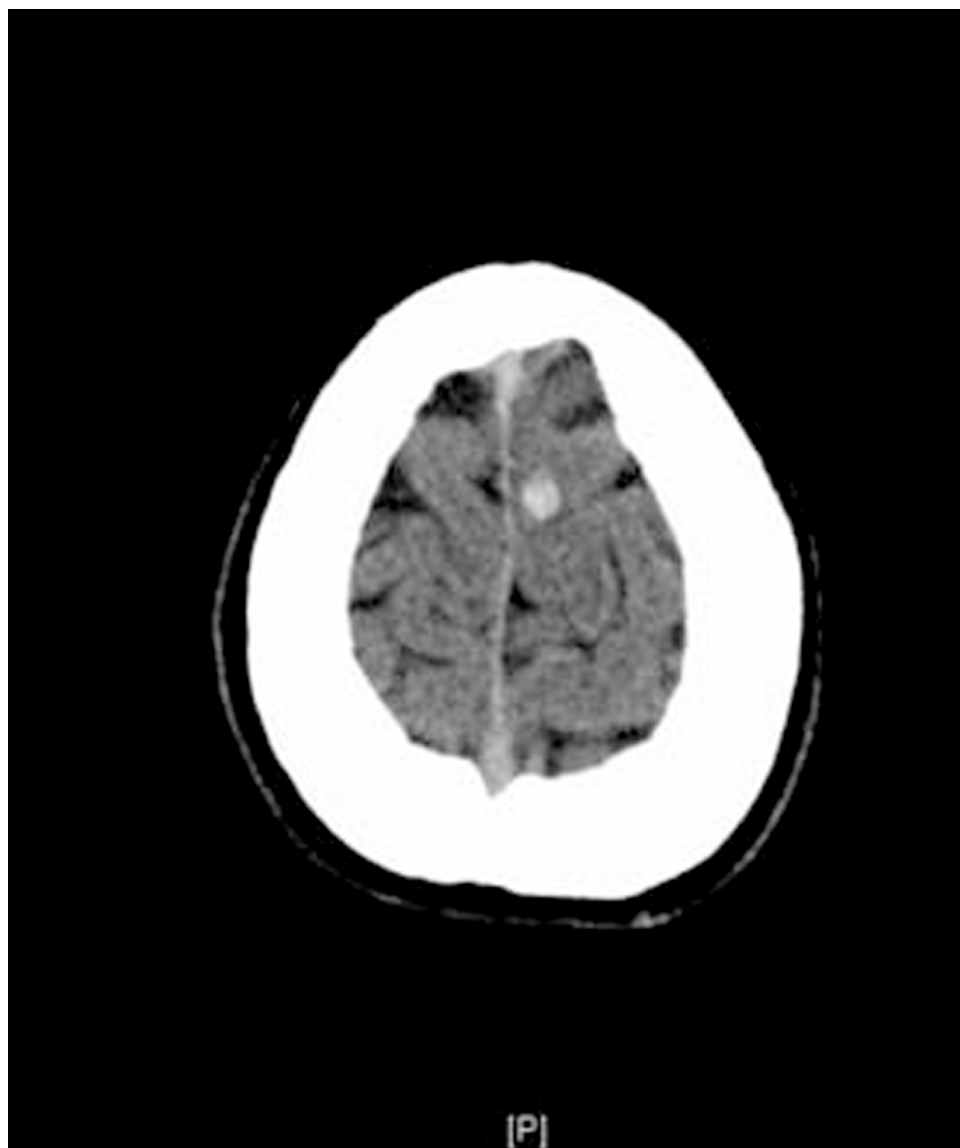


Figure 1 Uncontrasted CT brain scan. There is a solitary, well defined hyperintense 0.6 cm lesion to the left of the midline at the vertex, in the leg area of the primary motor cortex.

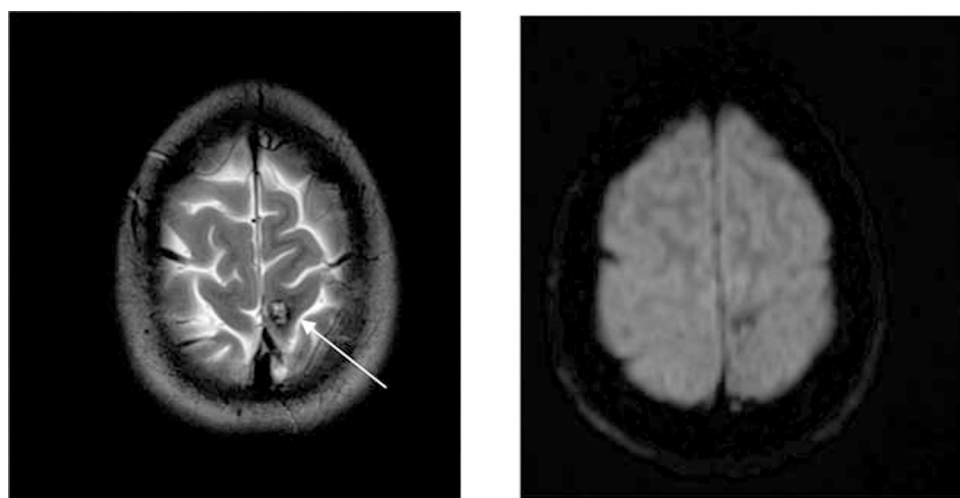


Figure 2 MRI brain. Left panel, T2-weighted image. The 'popcorn' lesion (arrow) measures 10 mm. The heterogeneity is caused by the dark rim of haemosiderin, suggesting previous haemorrhage, but there is no restricted diffusion on diffusion-weighted imaging (right panel).

patient not had a seizure, the CT might not have been carried out. We believe the patient probably had a congenital asymptomatic cavernoma that bled following the assault, resulting in the seizure and evolving spastic monoparesis of the right leg without sensory symptoms or signs. This might have occurred spontaneously, with the head trauma being coincidental, although cavernomata have been found in surgical specimens from parenchymal intracranial haematomas in cases of head injury.⁵

MRI is essential to distinguish between cavernomas and other vascular malformations, such as arteriovenous malformations and venous angiomas.⁴

Epilepsy is the most frequent manifestation of cavernomas and is thought to be provoked by haemosiderin.¹ Spontaneous haemorrhage is around 0.7% to 1.1% per year.¹ Unlike bleeding from aneurysms and arteriovenous malformations, haemorrhages are rarely fatal.

Conservative management usually suffices but sometimes surgical excision or stereotactic radiosurgery is required.⁶ Positron emission tomography and magnetencephalography may contribute to delineation of epileptogenic tissue, allowing complete resection.⁷ However, surgical intervention would not be appropriate in an eloquent area, as in our patient.^{6,8}

Learning points

- ▶ It should be recognised that patients who are intoxicated may harbour unexpected pathologies.
- ▶ Correct interpretation of neurological symptoms and signs is needed.
- ▶ Appropriate referral should be made and relevant investigations performed.

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Competing interests None.

Patient consent Obtained.

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