

## CASE REPORT

## 'A stroke of luck': a case report of a right-sided cerebellar cerebrovascular accident in a young man

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Accepted 13 May 2014

**SUMMARY**

A 27-year-old man with a history of migraines, epilepsy and pulmonary stenosis presented to the emergency department with symptoms of vomiting, headache, visual disturbance and problems with balance. The team considered the possibility of intracranial pathology and an urgent CT head with contrast showed what appeared to be a large posterior fossa mass with an appearance suggestive of a primary haemangioblastoma, which was causing considerable mass effect. The patient had neurosurgery to relieve the obstruction and a biopsy of the area showed the mass to be an ischaemic infarct rather than a tumour. Further investigations following the stroke confirmed that the cause was due to having antiphospholipid syndrome and a patent foramen ovale. The patient made a good recovery following the operation and remains well.

**BACKGROUND**

This case is important because it is a young patient who presented acutely with cerebellar symptoms suggestive of intracranial pathology, which is uncommon.

In the emergency department (ED) he had a CT head scan which showed what looked like a significant primary brain tumour due to the considerable mass effect and oedema that it caused. On further investigation, a biopsy showed that this was in fact an area of ischaemic infarction. The interesting point about this case is that the patient was identified as having antiphospholipid syndrome and the cause of his stroke was likely to be a paradoxical embolism from a right-to-left shunt through a patent foramen ovale. This meant that his prognosis was a lot better compared with if he had a primary brain tumour.

**CASE PRESENTATION**

A twenty-seven-year-old male patient with a history of migraines, epilepsy (for which he took sodium valproate) and congenital pulmonary stenosis with multiple balloon pulmonary valvotomies, moderate pulmonary incompetence and tricuspid valve incompetence.

The patient presented to the ED following a near collapse after getting up from sleeping. He felt extremely lethargic and nauseous. At no point did he lose consciousness. He had visual disturbances and slight photophobia. He had also been vomiting clear fluid. He had great difficulty mobilising. He had a Glasgow Coma Scale of 15. Physical examination revealed neurological deficit in terms of positive cerebellar signs with a marked nystagmus,

intention tremor, slurred speech, hypotonia and pass pointing. All his observations were stable at this point. He was non-feverish. No rash was identified.

The patient was previously fit, well and mobile and worked as a meat delivery driver for his father. He was an infrequent smoker and drank approximately 30 units of alcohol per week.

In his family history his father had hypertension and hypercholesterolaemia and his grandfather had a stroke in his 50s.

The patient was worked up for a possible diagnosis of meningitis and an urgent CT head scan was requested. His routine blood tests were unremarkable.

**INVESTIGATIONS**

*CT head scan with contrast (figure 1):* revealed a large posterior fossa mass with considerable oedema and mass effect with effacement/distortion of the normal anatomy there and compression of the fourth ventricle with resultant hydrocephalus of the third and lateral ventricles. The mass was associated with a small echogenic area which looked like a small area of haemorrhage. A scan of the thorax, abdomen and pelvis performed at the same time did not show any other obvious lesion. This finding was most likely a primary tumour and the appearances suggestive of a tumour such as a haemangioblastoma.

*CT thorax abdomen pelvis with contrast:* no solid lung lesion was seen. The patient had a normal liver, spleen, kidneys, pancreas, adrenals, gallbladder and biliary tree. There was no lymphadenopathy. There was no obvious destructive bone lesion.

After these preliminary investigations the patient was transferred to a neurosurgical centre for further workup and treatment.

*Biopsy of posterior fossa mass:* area of ischaemic infarction.

Bubble contrast echocardiogram: patent foramen ovale.

*Blood tests:* anticardiolipinantibodies IgG repeatedly positive over 5 months at levels of 17, 19 and 19, anti- $\beta$  2 glycoprotein 1 antibodies positive on 1 occasion at 12.

**DIFFERENTIAL DIAGNOSIS**

At the point of presentation the possible differential diagnoses were:

- ▶ Meningitis
- ▶ Cerebellar pathology



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To cite: Waterfield J. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-202483



**Figure 1** CT head scan with contrast: large posterior fossa mass with considerable oedema and mass effect.

### TREATMENT

Once a preliminary diagnosis of tumour had been made, the patient was started on intravenous dexamethasone and analgesia.

The patient was transferred over to the neurosurgeons at Walsgrave Hospital, Coventry, where the patient had neurosurgery to relieve the obstruction and hydrocephalus.

### OUTCOME AND FOLLOW-UP

As a result of the biopsy showing an area of ischaemic infarction, the patient had further investigations to find the cause of the stroke.

The patient is under the care of the cardiologists for his patent foramen ovale. A decision has not yet been made as to whether this defect needs to be closed.

He is also under the care of the neurologists as his sodium valproate medication had been adjusted. The neurologists

identified that he had positive anticardiolipin antibodies on blood tests and thus was referred to the haematologists to investigate further.

The haematologists made a diagnosis of antiphospholipid syndrome and strongly advised the patient to start anticoagulation therapy in the form of warfarin. Owing to the potential side effects of the warfarin, the patient was not happy to start it and preferred to stay on aspirin. He was trialled with clopidogrel but he developed a rash with this medication so it was stopped. He will be followed up again by the haematologists at which point the idea of anticoagulation will be discussed again.

### DISCUSSION

It is well documented that one of the most common causes of stroke in young people is secondary to a hypercoagulable state caused by antiphospholipid syndrome.

### Learning points

- ▶ Young patients can have cardiovascular accidents. Do not rule this out due to the age of a patient.
- ▶ In any patient presenting with problems with balance and posture, always consider intracranial pathology/cerebellar insult.
- ▶ Radiological imaging can help guide a diagnosis but it is not always definitive. In this case, what appeared originally to be a primary brain tumour actually turned out to be an ischaemic infarction, which has an impact on treatment and prognosis.
- ▶ A patent foramen ovale is significant in the aetiology of a paradoxical embolism if associated right-to-left shunting is present.

**Competing interests** None.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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