

# Developmental venous anomaly: a rare cause of cerebellar ataxia

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## DESCRIPTION

The most common causes of acute cerebellar ataxia are vascular disorders resulting in cerebellar ischaemia or haemorrhage. Most cerebellar haemorrhages are midline and therefore present with gait ataxia, truncal ataxia, dysmetria of lower extremities, sacadic intrusions and vertigo. Symptoms for cerebellar hemisphere lesions include dysdiadochokinesis, dysmetria of upper extremities, limb ataxia, intention tremor and scanning speech. Chronic progressive ataxias are most commonly degenerative and

frequently hereditary in origin; they account for half the cases of adult onset ataxia.<sup>1</sup>

Developmental venous anomalies are commonly encountered congenital anatomical variations of the cerebral vasculature—a malformation of medullary veins separated by normal brain parenchyma.<sup>2</sup> They are considered benign lesions that may uncommonly present symptomatically.<sup>3</sup>

We present a case of a 13-year history of acute onset, progressively worsening cerebellar ataxia with a developmental venous anomaly presenting



**Video 1** Ataxic dysarthria with normal mentation.



**Video 2** Dysdiadochokinesis.



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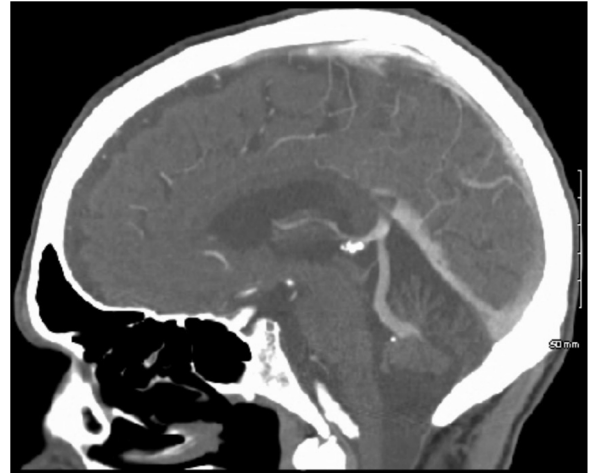


**Video 3** Dysmetria of upper extremities.

in a 62-year-old man. He was admitted for cerebellar ataxia. He reported a medical history of acute onset of cerebellar ataxia in 2003 as well as a 45-pack year tobacco use disorder. In the past month, the patient reported repeated falls as well as a low



**Figure 1** Cerebellar developmental venous anomaly revealed on CT angiography of the brain, axial view.

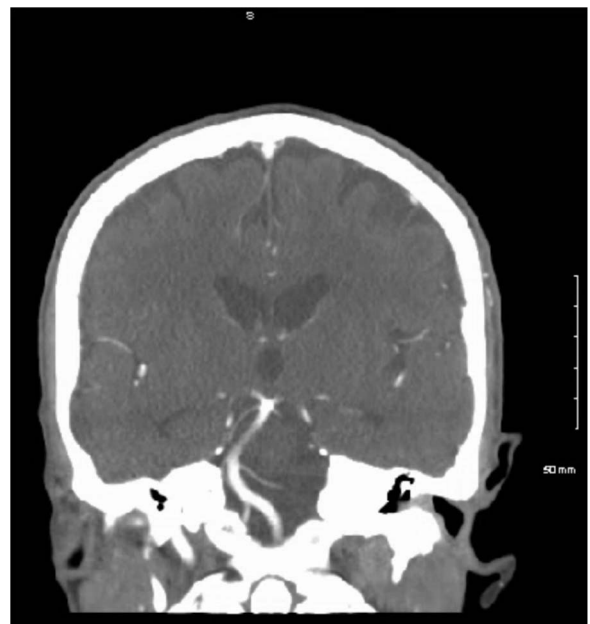


**Figure 2** Cerebellar developmental venous anomaly revealed on CT angiography of the brain, sagittal view.

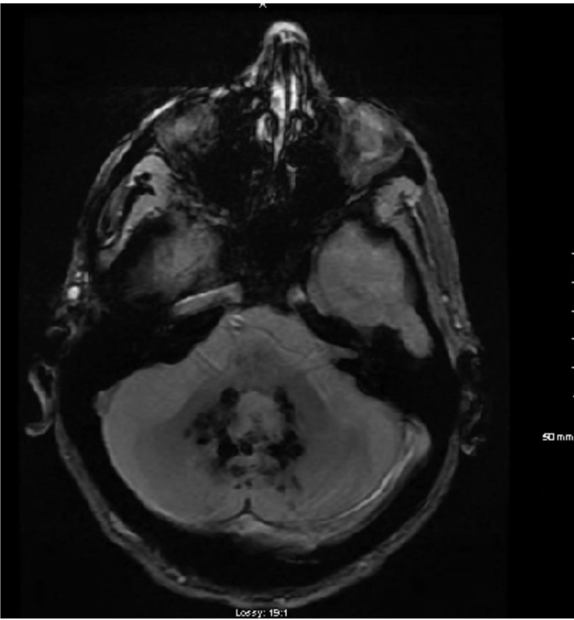
velocity, frontal impact motor vehicle collision requiring extrication, 1 week prior to presenting to the emergency room. He reported worsening dysphagia and progressive weight loss. He denied any recent illness or malaise.

On physical examination, he appeared cachectic (body mass index 16.4 kg/m<sup>2</sup>) alert, oriented and in no acute distress (video 1). He presented with an intention tremor, dysdiadochokinesis (video 2), dysmetria of the upper extremity (video 3), dysphagia, broad-based gait and ataxic dysarthria (video 1).

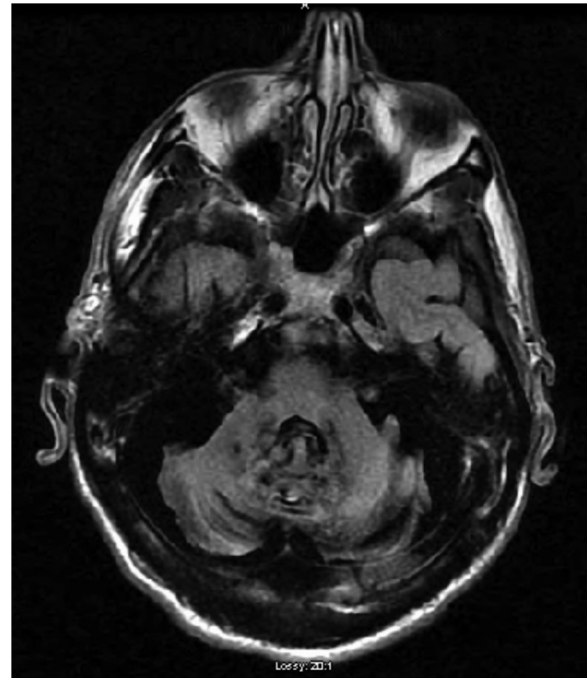
During his admission, CT angiography of the brain (figures 1–3) and MRI of the brain (figures 4–6) were performed, revealing a developmental venous anomaly in the cerebellar vermis, cerebral and cerebellar atrophy and chronic deep white matter ischaemic changes. The combined cerebellar atrophy and developmental venous anomaly is believed to have resulted in the cerebellar ataxia. Neoplastic and paraneoplastic disease was not excluded.



**Figure 3** Cerebellar developmental venous anomaly revealed on CT angiography of the brain, coronal view.

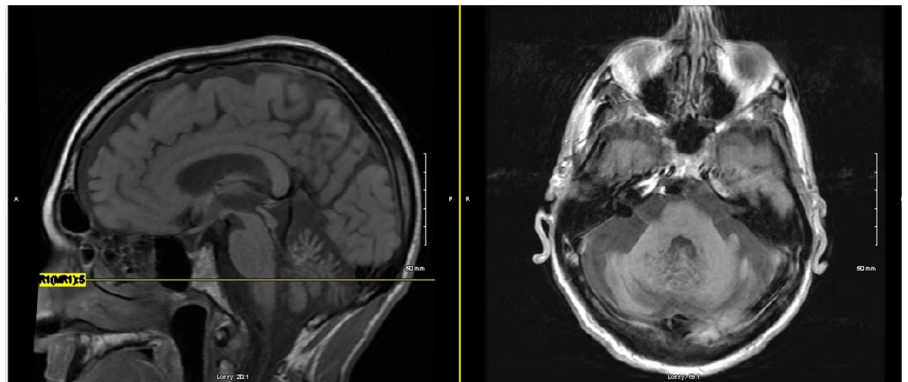


**Figure 4** Cerebellar developmental venous anomaly and cerebellar atrophy revealed on MRI, T2\* gradient recalled echo weighted.



**Figure 6** Cerebellar developmental venous anomaly and cerebellar atrophy revealed on MRI, fluid-attenuated inversion recovery weighted.

**Figure 5** Cerebellar developmental venous anomaly, cerebellar atrophy and cerebral atrophy revealed on MRI, T1 weighted, sagittal and axial views.



### Learning points

- ▶ Adult-onset progressive cerebellar ataxia points to a broad set of differential diagnoses.
- ▶ Not all developmental venous anomalies will remain asymptomatic.
- ▶ Physical, especially neurological examination, is paramount in identifying and treating cerebellar ataxia.

**Competing interests** None declared.

**Patient consent** Obtained.

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### REFERENCES

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