

# Self-limiting episodes of weakness of the left upper limb and dysphasia in a young man

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## CONFLICT OF INTEREST:

None

A 28-year-old man came to the emergency department of a tertiary hospital after suffering several brief episodes of focal neurological deficit, with complete recovery, and various hour-long episodes of diplopia. There was no relevant past personal or family medical history. He reported feeling neck and right occipital pain that had developed after sleeping in a car during a Formula 1 Grand Prix event 2 weeks earlier, and had suffered repeated coughing fits over the previous weeks. There were no abnormal findings on clinical examination and the electrocardiogram, chest radiograph, and cranial computed tomography were normal. Magnetic resonance imaging was diagnostic, revealing dissection of the distal segment (V3) of the right vertebral artery. We discuss the utility of magnetic resonance imaging requested from the emergency room for neurological disorders. [Emergencias 2009;21:65-67]

**Key words:** Magnetic resonance. Neurological disorders. Emergency department.

## Introduction

Dissection of supra-aortic trunks is a rare cause of acute cerebrovascular accidents (2%), although its importance increases considerably (10-25%) if one considers cerebral ischemic events in young patients. Unilateral cervical pain and the presence of intermittent neurological focalities are typical manifestations of this entity. The average time interval between the appearance of cervical pain and neurological symptoms is 15. Cerebral ischemic phenomena appear in up to 90% of patients with vertebral artery dissection and may affect the encephalic trunk, especially the lateral portion of the bulb (Wallenberg syndrome), as well as the thalamus, the cerebral or cerebellar hemispheres, although presentation in the form of transitory ischemic attack (TIA) is less frequent than in carotid system dissection<sup>1</sup>.

## Case report

A 28-year-old man presented at the Emergency Department (ED) of a tertiary hospital after experiencing an episode of left upper limb weakness, lip line distortion and speech disorder of approximately two hours duration with complete spontaneous recovery. He referred having had various 1-hour episodes of double vision previously. The patient had no relevant personal or family medical history and denied any intake of toxic substances. He also referred cervical and right occipital pain two weeks after sleeping in a car while attending a Formula One Grand Prix event. In the weeks before consulting ED, he had also had multiple cough attacks. On physical examination he was fully aware and oriented, with normal vital constants except for slight systolic hypotension (150/75mm Hg). Clinical tests were normal. Electrocardiogram (ECG), chest radiography and cranial computeri-



**Figure 1.** Axial plane magnetic resonance (MR) image obtained with fluid-attenuated inversion recovery sequence, showing signal alteration in the antero-inferior portion of the right thalamus, retrospectively visible in the CT scan. Additional MR images (not shown here) showed the presence of abnormal signals in another zone of the right cerebellar hemisphere. Both lesions suggested ischemic aetiology.

zed tomography (CT) scan were also normal. Vascular dissection was suspected given the symptoms and pain, leading to performance of magnetic resonance imaging (MRI) which proved diagnostic. MRI showed infarction of anterior thalamic nuclei and right cerebellar hemisphere secondary to dissection of the distal portion (V3) of the right vertebral artery (Figures 1, 2 and 3).

## Discussion

The symptoms referred by the patient suggested the presence of TIA. Dissection of supra-aortic trunks is a rare cause of acute cerebrovascular accidents (2%), although its importance increases considerably if one considers cerebral ischemic events in young patients, and then it constitutes 10-25% of cases: The patient had no relevant personal or family medical history, or clinical findings suggesting collagenopathy. Although there was no clear causal event, three risk factors may be considered in this patient: repeated neck craning during the car race, having slept in an awkward position for hours, and repeated cough attacks; one or more of these factors may have triggered the dissection<sup>2</sup>.



**Figure 2.** A T1-weighted axial MR image with fat saturation, showing the presence of a high-intensity half-moon signal surrounding the right vertebral artery flow void in the distal segment, which probably reflects the presence of an intramural haematoma.



**Figure 3.** Maximum intensity image in the coronal plane obtained from an angiographic sequence using contrast magnetic resonance imaging, which confirmed marked narrowing (cord signal) in a portion of the right vertebral artery (V3).

The ever-increasing use of MRI in ED means that this technique is becoming the initial diagnostic tool of choice to evaluate many emer-

gency pathologies of the central nervous system. MRI is safer and offers greater visual resolution of structures in medullary compression syndrome than CT scan with myelography; in suspected sinus vein thrombosis and cerebral artery dissection, due to its high sensitivity for the detection of cerebral ischemia. MRI allows adequate delimitation of the vascular lumen with contrast medium, identification of intramural haematoma and furthermore is safer and cheaper than conventional endovascular angiography in this type of pathology<sup>3,4</sup>. Also, MRI is increasingly used and considered as standard in certain departments to evaluate different entities such as meningoencephalitis –suspected herpes simplex encephalitis–, non-infectious vasculitis, subarachnoid haemorrhage, cerebral vein thrombosis and acute stroke<sup>5,6</sup>. In our case, the non-availability or omission of MRI would possibly have led to misdiagnosis with inadequate treatment and prognosis.

Alternative radiological techniques that could

have been used for diagnosis on suspecting arterial dissection include modern multi-cut CT angiography, usually more readily available in emergency departments, as well as supra-aortic trunk echography; although this may detect flow pattern anomalies, it rarely manages to identify dissection itself.

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## Varón joven con episodios autolimitados de debilidad en la extremidad superior izquierda y disfasia

Concepción Aramendia L, Llorens P, López-Andújar Aguiriano L, Martínez Beloqui E

Varón de 28 años, que acude al servicio de urgencias de un hospital terciario tras haber presentado cuadros breves repetidos de déficit neurológico focal recuperados completamente, además de varios episodios de visión doble de una hora de duración. El paciente no presenta antecedentes médicos o familiares relevantes. Refiere haber presentado dolor cervical y occipital derecho desde hace dos semanas después de dormir en un coche al acudir a un Gran Premio de Fórmula Uno. En las últimas semanas ha presentado además múltiples accesos de tos. La exploración clínica del paciente fue normal. El electrocardiograma, la radiografía de tórax y una tomografía computarizada craneal realizadas no demostraron anomalías. Se realizó una exploración de resonancia magnética en la que se observó una discción en la porción distal (V3) de la arteria vertebral derecha. Se describe la utilidad de la realización de la resonancia magnética en los servicios de urgencias en patología neurológica. [*Emergencias* 2009;21:65-67]

**Palabras clave:** Resonancia magnética. Patología neurológica. Servicio de urgencias.