

Economy class stroke syndromes and vertebral artery dissection

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Received: 8 November 2011 / Accepted: 23 January 2012 / Published online: 4 February 2012
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Keywords Economy class stroke syndromes · Vertebral artery dissection · Young adults

Dear Sir,

Economy class syndrome (ECS) is the association between air travel and deep vein thrombosis [1]. Some authors named this as traveler syndrome; in fact it can also occur during rail travel or business-class flights [2]. A rare variant known as economy class stroke syndrome (ECSS) is characterized by the appearance of an ischemic stroke during or in the hours following a long flight [3] and is frequently associated with the presence of patent foramen ovale (PFO) [2]. We describe a young adult who had experienced an ECSS secondary to the left vertebral artery dissection and review the current literature on this topic.

A 39-year-old healthy man on a 12 h economy class long haul flight fell asleep with head uncomfortably twisted and lateroverturned to the right. On waking, he noticed occipital pain, dizziness and vomit, and parasthesia in the left side of face and right arm. The episode lasted 15 min, but recurred 6 h later. On the admittance he showed: paresthesia in the

left side of the face and right arm, upbeat and rotatory nystagmus, hoarseness, dysphagia, left soft palate paresis, and gait ataxia. MRI of the brain (Fig. 1a, b) showed, on diffusion weighted imaging, an acute left lateral medullary infarction in the posterior inferior cerebellar artery territory. MRI (Fig. 1c) and digital subtraction angiography (Fig. 1d) showed, on left vertebral artery, an irregularity from V3–V4 tract to its junction with the basilar artery. Those findings point for vertebral artery dissection. Risk factors for cervical artery dissection (CAD) as recent infection, hyperhomocysteinemia, α 1-antitrypsin deficit, hypertension and genetic cause (eg. Ehlers–Danlos syndrome type IV, Marfan’s syndrome etc.) were excluded. A transesophageal echocardiogram excluded PFO.

Treatment with antiplatelet drug was used. He completely recovered in 2 months.

Cervical artery dissection represents one of the major causes of cerebral ischemia in young adults [4]. CAD is probably a multifactorial disease caused by several genetic variants and environmental factors [4]. Only less than 2% of cases of CAD have been associated with a known monogenic connective tissue disease [4]. A history of a minor precipitating event is almost present in those patients, frequently represented by hyperextension and/or rotation of the neck [4]. ECSS or for some authors travel-associated stroke, is a rare condition represented by the association of travel, deep vein thrombosis and stroke frequently due to PFO [2, 3]. Our case of ECSS was related to vertebral artery dissection, a clear environmental factor represented by the uncomfortable head posture and was the mechanical trigger of the disease. Other precipitating factors were excluded thus, the “economy class” condition was the main etiopathogenetic condition. A previous ECSS due to vertebral artery dissection was reported [5]. Moreover, a case of vertebral artery dissection without stroke following

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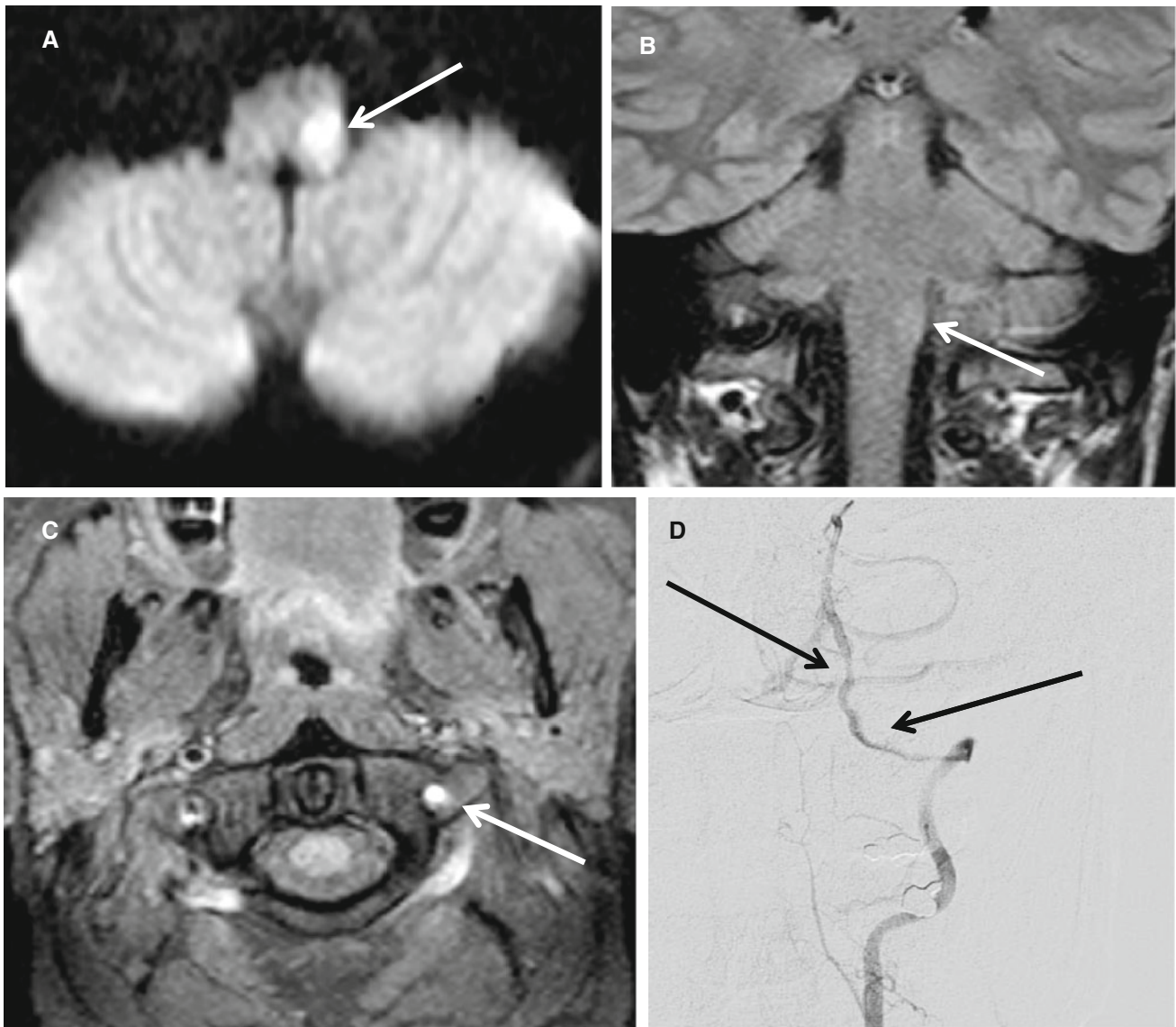


Fig. 1 Brain MR: diffusion-weighted imaging axial view (a) and fluid-attenuated inversion recovery coronal view (b) are consistent with acute left lateral medullary infarction; TSE T1w with fat suppression (c), showing a hyperintense left vertebral artery due to

mural hematoma, and an eccentric hypointense signal attributable to the flow void of the residual lumen. Digital subtraction angiography (d) (*frontal projection*) showing caliber reduction and irregular contour of left vertebral artery (V3–V4) (*arrows*)

a long haul was also described [6]. All these cases share a common denominator: head was maintained for a long time in an uncomfortable and unusual position.

In conclusion although CAD is a very rare event, it must be considered as a cause of “economy class stroke syndrome”. Because of the increase of intercontinental air travel, to prevent CAD, passengers must be warned to avoid unusual and uncomfortable head posture during long haul flight.

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