Neurology Asia 2010; 15(2) : 167 – 171

CASE REPORTS

Traumatic vertebral artery dissection mimicking central pontine myelinolysis: A case report

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Abstract

A 27 year-old Chinese man, involved in a motor vehicle accident, presented with rapidly progressive pseudobulbar palsy and spastic tetraplegia. Magnetic resonance imaging (MRI) of the brain showed central pontine T2 hyperintensity with an unaffected outer rim, consistent with central pontine myelinolysis. There was no hyponatraemia before MRI and he was neither an alcoholic nor malnourished. Cerebral angiogram confirmed the diagnosis of right vertebral artery dissection. Vertebral artery dissection should be considered in a case with imaging suggestive of central pontine myelinolysis.

INTRODUCTION

Central pontine myelinolysis (CPM) or osmotic demyelination syndrome, as described by Adams in 1958, is a demyelinating disorder in the centre of basis pontis.[1] It is characterized by rapidly progressive onset of spastic quadriplegia and pseudobulbar palsy, with progression to locked-in syndrome. Magnetic resonance imaging (MRI) of the brain typically shows symmetrical T2-weighted hyperintense focus in the central part of the pons with sparring of the outermost tegmentum and a peripheral rim of ventral pontine tissue. In some cases, two central symmetric isointense structures within the hyperintense pons, representing the spared descending corticospinal tracts, may be observed.[2] It was originally described in hyponatraemic patients with a history of alcohol abuse[1] but more recently has been documented following liver transplantation[3] and in patients with hypokalaemia.[4,5] CPM had been reported in a normonatraemic alcoholic patient with malnourishment.[6-7] An unusual case of CPM in shock, with spontaneous recovery had also been reported.[8] Other rarer causes include psychogenic polydipsia, burns (infrequent, often with hypernatraemia), after pituitary surgery, post-urological/gynaecological surgery, and prolonged diuretics.[9]

Vertebral artery dissection (VAD) is an important cause of brainstem stroke in patient younger than 45 years.[10,11] The locations of the dissections were classified as extradural (V1, V2 and V3) and intradural (V4). The intradural dissection is the commonest site of dissection in an angiographic study of VAD.[12] Patients with intradural dissection usually present with severe headache and subarachnoid haemorrhage, as well as infarction.[12] The most common site for infarction was cerebellum followed by the occipital lobe.[13] In the patients with brainstem stroke, lateral medullary syndrome was the commonest clinical picture.[14] Locked-in syndrome in VAD had been reported but uncommon[15-16], and it is usually related to basilar artery involvement.

This case demonstrated an uncommon presentation of traumatic VAD, which presented with locked-in syndrome and central pontine involvement in neuroimaging without predisposing factors for central pontine myelinolysis. Association between CPM and vertebral artery dissection has not been previously reported in the medical literature.

CASE REPORT

This is a 27 year old Chinese gentleman, who worked in a recreation club. He met with a motor vehicle accident at midnight, back home from work. He was a driver of a car which skidded and overturned and hit a tree. He managed to get out of his car without help and called his family through handphone. He was admitted on the same day and was found to have a fracture of the left body of the mandible and the right condyle, and also fracture of spinous process of C6 and C7.

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