Vertebral Artery Dissection: An Uncommon Cause of Stroke in Young

DP Singh*, Kaushal Harlalka**, OP Meena***, Hemant Mahur****

A 35 years old male, farmer by occupation, presented with history of sudden onset occipital headache, dizziness, a single episode of vomiting followed by unconsciousness. There was no history of head trauma, manipulation of spinal column, rapid rotational movement of neck. No history of cough, hypertension, diabetes mellitus.

*Professor and Head, **Third year PG Student, ***Assistant Professor, ****Assistant Professor, Department of Medicine, RNT Medical College, Udaipur–313001, Rajasthan, India
Received: 17.11.2009; Revised: 04.02.2010; Accepted: 05.02.2010
On admission, he was in altered sensorium (Glasgow Coma Scale 9/15), pulse rate 96/min regular, blood pressure: 112/70 mm Hg, respiratory rate: 16/min and temperature: 98.4°F. On neurological examination he had left seventh cranial nerve palsy (UMN type), right third cranial nerve palsy and left hemiparesis. Fundus examination was unremarkable. CT scan brain revealed infarct in right cerebellar hemisphere. His routine blood chemistry including lipid profile was normal. Hematological parameters CBC, ESR were normal and ANA, rheumatoid factor, serum VDRL were negative. CSF examination was within normal limits. 2D-ECHO was done to rule out any cardioembolisation. Colour Doppler of neck vessels was normal. Two days later, MR imaging of brain with MR angiography of brain and neck showed multiple hyperintense lesions on diffusion weighed sequence involving bilateral cerebellar hemispheres (right > left), both sides of pons, right side of mid brain and the right thalamus (Fig. 1). Axial three-dimensional time of flight MR angiography of brain vessels (Fig. 2) revealed significant stenosis at the terminal end of basilar artery extending into origins of bilateral posterior cerebral arteries. Axial three-dimensional time-of-flight MR angiography of neck vessels (Figs. 3 and 4) showed an intimal flap in mid segment of left vertebral artery causing formation of a true as well as a false lumen proximal and distal left vertebral artery appears normal. Patient was given i.v. heparin for 5 days followed by oral anticoagulant at the time of discharge, patients neurological status improved. After that patient was lost to follow up.

Cervical arterial dissection account for about 20% of young strokes, though vertebral dissection are up to five times less common than carotids. Vertebral artery dissection (VAD) has an estimated incidence of around 1.0 per 100,000 and slightly more common in females. Trauma is the most common cause of VAD. Such trauma may be severe or trivial. Rapid and extreme rotational movement of the neck is the most common identifiable cause, as in turning the head to back up a car. Other activities such as chiropractic manipulation (manipulative treatment of spinal column), bowling, tennis, swinging a golf club, archery have been reported to cause VAD. Forceful coughing may also cause dissection. Underlying intrinsic weakness of vessel wall due to fibromuscular dysplasia, Marfan syndrome, Collagen vascular disease may predispose to arterial dissection. Patients usually present with headache and/or neck pain, commonly posteriorly situated, vertigo, vomiting, visual loss, ataxia, often with additional features referable to pons or mid brain, particularly diplopia and dysarthria. Diagnosis of VAD should be suspected if persistent occipitonuchal pain is prominent and follows one of the known precipitants described above. MR Imaging is believed to be the modality of choice for initial evaluation of VAD. Though there are no randomized trials, such patients are treated with anticoagulant therapy. On the basis, that mechanism of stroke in arterial dissection is embolic. For individuals who do not tolerate anticoagulant therapy, antiplatelets should be considered. The optimal duration of treatment remain unclear, though a 3-6 months course is advocated.

In this case other causes of stroke like vasculitis, collagen vascular disease, cardioembolisation were ruled out by investigations. There was no history of any obvious trauma to neck and head but still trivial trauma may be the cause, that remained unnoticed.

References