25% of stroke cases. Angioplasty and stenting are minimally invasive techniques and are gaining wider acceptance. Angioplasty has been tempered by the increased risk of stroke resulting from distal embolization, vessel dissection, or arterial rupture. Stenting has been shown to increase the safety and efficacy of balloon angioplasty. Stent technology has evolved and new stents that have more flexibility and radial force were introduced.1,2

Thrombolytic therapy for the occlusion of the ICA should be started within 6 hours after the onset of stroke.4 Intraarterial thrombolysis offers early recanalization with relatively low dose of t-PA. The direct application of thrombolytic drug allows a lower total dose, may reduce systemic effects and may reduce time to recanalization.4 Intracranial thrombolysis has been performed using direct thrombolysis. Intra-arterial delivery of highly concentrated drug and mechanical disruption of the thrombus by the catheter and guidewire may have advantages over the intravenous administration.3

Reopening of the occluded carotid arteries is controversial, and neither surgical nor endovascular treatment of complete ICA occlusion has become standard practice. For patients with chronic occlusions, successful reopening of the ICA is highly unlikely. However, in acute occlusion, emergency surgery to perform a thromboendarterectomy using Fogarty catheter to pull thrombus can yield good results.5 Bellon et al have used a device to open occluded ICA to reach MCA occlusion to obtain flow.6

PTA and stenting of the carotid arteries are associated with an obligatory release of particulate debris into the distal cerebral circulation. Although most of the emboli are small and do not cause symptomatic neurological deficit, some may be large enough to result in stroke. For this reason cerebral protection with occlusive balloon, filter, flow-reversal is used to decrease the risk of distal embolization during PTA and stenting.7,8

Isolated internuclear ophthalmoplegia as a manifestation of an isolated inflammatory demyelinating lesion of the brainstem

Sir,

Internuclear ophthalmoplegia (INO), an uncommon clinical sign, is more frequently described in association with multiple sclerosis (MS).1,2 However in patients with MS mild to moderate INO can be missed on clinical examination.3 Detection of a lesion in medial longitudinal fasciculus (MLF) depends upon the appropriate choice of magnetic resonance imaging (MRI) sequences.4 We present a patient with isolated unilateral INO probably due to an isolated inflammatory demyelinating lesion of the brainstem.

A 34 year-old otherwise healthy lady presented with two-day history of diplopia on left gaze. Otherwise the history was unremarkable. There was no fever or vaccination before the onset of the symptoms. Clinical examination showed right-sided INO with normal convergence. She did not have any other neurologic deficit. MR imaging of the brain revealed a focal hyperintense lesion in the right midbrain tegmentum (in the region of trochlear nucleus) (Figure 1, 2). Cerebrospinal fluid analysis (CSF) showed normal biochemistry and a cell count of 5 lymphocytes. CSF was negative for oligoclonal bands. Routine blood biochemistry and hemogram including erythrocyte sedimentation rate at first hour, collagen profile were normal. Tests for retroviral serology were negative. Electrodiagnostic tests, nerve conduction studies, visual, somatosensory, and brainstem auditory evoked potentials were normal. Based on the MRI finding, she was diagnosed as a case of inflammatory demyelinating disorder and was treated with intravenous methylprednisolone, 1 g/day per 3 days. She had a partial improvement.

Internuclear ophthalmoplegia is a distinct clinical sign and seen in association with a lesion in the MLF between the third and sixth cranial nerve nuclei (midbrain or pontine tegmentum). The causes of INO include MS, brainstem stroke, brainstem tumor, metastases, traumatic brain injury, central

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Accepted on 05.08.2004.
Letter to Editor

Figure 1: Proton density (PD)-coronal sequence MR imaging of brain showing a focal hyperintense lesion in midbrain tegmentum on the right side, in the region of trochlear nucleus

Figure 2: Fluid-attenuated inversion recovery (FLAIR)-sagittal sequence MR imaging of the brain showing a focal hyperintense lesion in midbrain tegmentum

In MS patients with INO, hyperintense lesions in MLF have been demonstrated in all patients on PD sequence, in 88% on T2-weighted imaging and in 44% on FLAIR sequences. In our patients the lesion in the MLF was detected only on PD coronal and FLAIR. Thus our recommendation in patients is to acquire PD sequence in addition to the other sequences in a patient with suspected INO.

S. Kumar, S. Aaron
Neurology Unit, Department of Neurological Sciences, Christian Medical College, Vellore - 632004, Tamil Nadu, India.
E-mail: drsudhirkumar@yahoo.com

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Accepted on 16.06.2004.

Heterogeneity in clinical presentation of acute disseminated encephalomyelitis

Sir,

Acute disseminated encephalomyelitis (ADEM) refers to a monophasic, immune-mediated, inflammatory demyelinating disease of the central nervous system, predominantly affecting the white matter. Though ADEM was first reported more than 70 years ago and the term is widely used today, it seems to be inadequate in the light of increasing clinical experience with ADEM. The current communication is aimed at highlighting the clinical heterogeneity of ADEM and the need for a more suitable term for this syndrome.

The term “disseminated” refers to the involvement of multiple sites of neuraxis, either clinically or subclinically (when...