Neurol Sci (2013) 34:1867–1869
DOI 10.1007/s10072-013-1338-4

LETTER TO THE EDITOR

Photophobia and bilateral pulvinar involvement in non-alcoholic Wernicke's encephalopathy

F. Rosini · A. Cerase · E. Pretegiani · G. Lucii · P. Federighi · A. Federico · A. Rufa

Received: 21 January 2013 / Accepted: 16 February 2013 / Published online: 9 April 2013

Keywords Neuro-ophtalmology · Non-alcoholic Wernicke's encephalopathy · Photophobia · Brain MRI

Dear Sir,

Photophobia is a subjective discomfort to light, varying from mild to intolerable pain, which can be associated with disorders of the anterior eye segment, or intracranial diseases [1]. Although the exact pathophysiology remains obscure, an interaction between the trigeminal nociceptive pathway and the visual system at various brain and ocular levels is accepted [1, 2]. A possible involvement of pulvinar has been recently considered, since it receives both second-order trigeminal neurons projections [3] and direct retinal fibers belonging to the non-visual forming pathway (NVFP) [4, 5]. Wernicke's encephalopathy (WE) is an acute neurological disorder due to thiamine deficiency, usually involving specific brain areas, such as thalamus and periaqueductal region, also accounted in the pathway of photophobia. Photophobia, however, has never been reported as presenting symptom in WE.

Here we report two patients with photophobia as manifesting symptom of non-alcoholic WE, who, beside the involvement of the nociceptive brainstem structures, presented a clear involvement of the pulvinar at brain MRI. The two subjects, respectively, of 70 and 63 years of age, have been described in a review reporting the clinical and MRI findings of ten patients who developed WE after gastrointestinal surgery for cancer [6]. The study was performed according to the Declaration of Helsinki and was approved by the local Ethics Committee.

The older patient underwent a surgical procedure of pancolectomy for a colon cancer. One month later, he suddenly became confused, with deterioration of short-term memory, and asleep. Neurological examination showed horizontal and vertical gaze restriction, mild cerebellar signs as dysarthria and dysmetria, and photophobia. Pupillary diameter was 3 mm they were poor reactive to light and near. Spot light exposure was associated with painful photophobia. Brain MRI evidenced areas of signal alterations in periaqueductal gray, mammillary bodies, medial thalami, both pulvinars, frontal and parietal cortex confirming the diagnosis of WE (Fig. 1a, b). A substitutive therapy with thiamine 300 mg/daily was administrated 2 days after the onset of neurological symptoms. Although the neurological conditions significantly improved with therapy, the patient died for pulmonary complications.

The younger subject was diagnosed with a rectal tumor. Ten days after the surgical removal of cancer, he presented with agitation and mental confusion. Neurological examination pointed out cerebellar signs, such as mild dysarthria, dysmetria and gaze-evoked nystagmus, and vertical gaze restriction. Short-term memory was affected. Pupillary diameter was 3.5 mm with poor reactivity and intense

F. Rosini · E. Pretegiani · G. Lucii · P. Federighi · A. Rufa (✉)
Eye Tracking and Visual Applications Lab (EVA Lab),
Department of Medical, Surgical and Neurological Sciences,
University of Siena, Policlinico "Santa Maria alle Scotte",
viale Bracci 2, Siena, Italy
e-mail: rufa@unisi.it

A. Cerase
Unit NINT Neuroimaging and Neurointervention,
Azienda Ospedaliera Universitaria Senese,
Policlinico Santa Maria alle Scotte, Siena, Italy

A. Federico
Department of Medical, Surgical and Neurological Sciences,
University of Siena, Policlinico "Santa Maria alle Scotte",
viale Bracci 2, Siena, Italy