Functional convergence spasm: an unexpected finding in a patient with focal epilepsy

G. MASTROIANNI1, S. NERI1,2, M. ASCOLI1,2, S. GASPARINI1,2, V. CIANCI1, U. AGUGLIA1,2,3, E. FERLAZZO1,2,3

1Regional Epilepsy Centre, Great Metropolitan Hospital Bianchi-Melacrino-Morelli, Reggio Calabria, Italy
2Department of Medical and Surgical Sciences, Magna Graecia University, Germaneto, Catanzaro, Italy
3Institute of Molecular Bioimaging and Physiology, National Research Council, Germaneto, Catanzaro, Italy

Introduction

Convergence spasm (also named “spasm of the near reflex”) is a clinical condition characterized by transient episodes of convergence, miosis and accommodation with strabismus and diplopia. Convergence spasm usually is a manifestation of a functional neurological disorder, but an association with organic causes has been reported. Epileptic seizures may rarely present with paroxysmal gaze deviation. We describe a patient with a challenging diagnosis of functional convergence spasm in the setting of occipital lobe epilepsy.
symptoms. At 12-month follow-up, convergence spasm persisted only during ocular motility test.

**Discussion**

We reported a patient with an unusual coexistence of functional (convergence spasm) and organic (focal epilepsy due to cortical dysplasia) neurologic disorders.

Convergence spasm has usually a psychogenic origin. Fekete et al.\(^5\) provoked convergence spasm more commonly in subjects with psychogenic movement disorder (69%) as compared to subjects with non-psychogenic movement disorder (36%) or healthy controls (33%). Convergence spasm has also been described in the setting of organic diseases, such as vertebro-basilar stroke\(^6\), metabolic encephalopathy\(^7\), thyroid diseases\(^8\), head injury\(^9,10\), increased intracranial pressure\(^11\), Wernicke encephalopathy\(^12\) and multiple sclerosis\(^13-15\). Diagnosis of convergence spasm may be difficult. Misdiagnosis with sixth nerve palsy is common. Scoppetta and Di Gennaro\(^16\) described a patient with convergence spasm misdiagnosed as ocular myasthenia.

Paroxysmal ocular movements, such as nys-
Functional convergence spasm: an unexpected finding in a patient with focal epilepsy

Figure 2. a, Interictal EEG showing epileptic activity over left posterior leads. b, Video-EEG showing no ictal activity during convergence spasm.
tagmus and gaze deviations can occur during epileptic seizures and may be accompanied by other symptoms such as head version, dystonic limb posturing or autonomic symptoms. Ictal ocular movements could be explained by the involvement of areas controlling ocular motility (named “eyes fields”) including frontal, temporal and parieto-occipital cortices. In our patient, the diagnosis was challenging since convergence spasm was initially believed to be an epileptic phenomenon arising from the occipital cortex. The lack of ictal activity during convergence spasm allowed us to exclude such hypothesis.

**Conclusions**

Convergence spasm often represents a manifestation of a functional neurological disorder and should promptly be recognized in order to define the appropriate management.

**Conflict of Interest**
The Authors declare that they have no conflict of interests.

**Consent to Participate**
The patient signed the informed consent.

**Availability of Data and Material**
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

**Funding**
This study received no funding.

**Authors’ Contribution**
MG, NS and FE found references and drafted the manuscript. AM and NS read the literature. GS and AU summarized information of the case. CV helped to draft the manuscript. MG disposed figures. FE and AU evaluated the data of patient, designed literature retrieval strategy, and modified the manuscript. All authors read and approved the final manuscript.

**References**

2) Faucher C, De Guise D. Spasm of the near reflex triggered by disruption of normal binocular vision.
8) Roper-Hall G. The influence of the vergence system on strabismus diagnosis and management. Strabismus 2009; 17: 3-8.