Dear Sir,

Myoclonus consists of sudden, involuntary muscular contractions [1]. The feature that distinguishes spinal, or segmental myoclonus from other forms of more generalized myoclonia is its restriction to one somatic region secondary to spinal cord pathology at the involved level [2]. Propriospinal myoclonus is characterized by generalized and symmetric jerks that arise from axial muscles and spread to other myotomes by means of propriospinal pathways [3].

Neurologic paraneoplastic disorders are syndromes that are neither due to direct metastases nor to toxicity of cancer therapy, coagulopathy, infection, or toxic/metabolic causes. They are far less common than metastases and other nonmetastatic neurologic complications of cancer, but they are important because of the severe and permanent neurologic morbidity. Also, because often they are the presenting feature of an otherwise undiagnosed tumor, early diagnosis maximizes the likelihood of successful tumor treatment and favorable neurologic outcome [4].

Case Report

A 42-year-old woman presented with a 2-year history of primarily large amplitude jerks that had become a daily occurrence for the past 3 months, always involving the lower extremities, frequently the upper, and sometimes the torso. The movements were preceded by a sensation of an electric current shooting down her body, lasting 3–5 s and occurring every minute for up to 40 min. A videotape of one such spell showed frequent myoclonic jerks affecting her lower extremities more than her upper extremities. She had them occasionally while standing up, but they never caused her to fall. She did not report loss of consciousness and had no history of seizures. There was no oral trauma or urinary incontinence with these episodes. She did have a 10-year history of restless leg syndrome and was being treated with clonazepam and trazodone. When these myoclonic jerks developed, she was also started on ropinirole with modest, if any, improvement in her symptoms.

The patient denied head trauma, status to check for amphiphysin antibodies since papillary thyroid carcinoma. The fact that this preceded the discovery of the tumor by 2 years could be due to the slow growing nature of her neoplasm.

Discussion

We report the first case of paraneoplastic propriospinal myoclonus due to papillary thyroid carcinoma. The fact that this preceded the discovery of the tumor by 2 years could be due to the slow growing nature of her neoplasm.

After thyroidectomy and radiation therapy, her symptoms improved significantly and were subsequently completely controlled with low-dose levetiracetam.

Although no paraneoplastic autoantibodies are specifically associated with papillary thyroid carcinoma, we planned to check for amphiphysin antibodies since they have been reported in other paraneoplastic myoclonus syndromes [5], but due
to the cost involved the subject declined. The EEG with added EMG leads revealed few myoclonic jerks not associated with epileptiform abnormalities, ruling out seizure disorder, and her SSEP did not reveal giant potentials, thereby ruling out cortical myoclonus. Because of these results and the videotape evidence provided by the patient, we did not feel the need to do an EMG to further classify the myoclonus. A normal cervical and thoracic spine MRI ruled out any structural lesions as causes for these myoclonic movements. Based on these findings, we conclude that this represents a paraneoplastic phenomenon.

Propriospinal myoclonus has been reported before with breast cancer and also with mediastinal masses [6, 7]. There have been no neurological paraneoplastic syndromes reported with papillary thyroid carcinoma; the only paraneoplastic syndrome reported with this neoplasm has been polymyalgia rheumatica [8].

Levetiracetam is an anticonvulsant well known to be efficacious in the treatment of different types of myoclonia [9–10] and improved our subject's myoclonus, as did treating her primary malignancy.

In conclusion, this is the first reported case of propriospinal myoclonus as a paraneoplastic phenomenon with papillary thyroid carcinoma. Together with the cases referenced above, hopefully awareness will be raised among physicians confronted with propriospinal or segmental myoclonus of the possibility of occult neoplasms, leading to timely and efficient treatment of these patients’ malignancies.

References