

Improving writer's cramp dystonia after prolonged muscle stimulation. Report of two cases

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Abstract

Focal primary dystonia has been recognized as a motor disorder; nevertheless, some studies suggest that sensory dysfunction might be involved. We report two patients who improved their writer's cramp dystonia after deep muscle stimulation using acupuncture needles. We support the hypothesis that deep and prolonged stimulation of muscles related to dystonia can modify the cortical sensory-motor response and improve writer's cramp.

Keywords: Writer's cramp, Deep muscle stimulation, New approach.

Resumen

La distonía focal primaria ha sido reconocida como un trastorno motor. Sin embargo, algunos estudios sugieren que una disfunción sensorial puede estar involucrada. Nosotros reportamos dos casos clínicos que corresponden a pacientes que mejoraron su distonía de calambre del escribiente después de la estimulación muscular utilizando agujas de acupuntura. Nosotros apoyamos la hipótesis de que la estimulación profunda y prolongada de los músculos relacionados con la distonía pueden modificar la respuesta sensitivo-motora cortical y mejorar el calambre del escribiente.

Palabras Clave: Calambre del escribiente, Estimulación muscular profunda, Nuevo enfoque.

Introduction

Focal primary dystonia (FPD) has been recognized as a motor disorder, although clinical, neurophysiological and imaging observations suggest that sensory dysfunction might also be involved.¹⁻⁴

Underlying mechanisms that involve frequent, repetitive and temporarily related stimuli could be a factor triggering focal dystonia. It has been shown that the primary sensory cortex (S1) and secondary parietal cortex record increased activity during dystonic posture.⁵ Some studies have found that, in patients with focal hand dystonia, there is an abnormal representation in S1 and that this abnormality may be related to the severity of the dystonia.⁵ In these patients, there may be a loss of the cortical inhibition, and an increase in neuronal plasticity.⁶

We report two patients with writer's cramp dystonia who responded well to prolonged and repeated stimulation of their hand muscles with acupuncture needles.

Patient 1

Sixty-year-old, right-handed male patient, writer by profession, with a right writer's cramp dystonia that started four years earlier. One year before he had been administered a treatment with botulinum toxin, which improved the dystonia for six months.

We performed a muscle puncture in his right hand using acupuncture needles in the abductor pollicis brevis and first interosseus dorsalis muscles for 30 minutes.

After this procedure, the patient showed significant improvement in his writing for more than 72 hours. The procedure was repeated twice a week for a month and then once a week. The patient has shown a significant improvement until one year after of the first puncture.

Patient 2

Seventy-two-year-old, right-handed male patient, lawyer, with a writer's cramp dystonia that started five years earlier. He has been working as a writer for 30 years. He had not been able to write for one year before treatment (Figure 1a). We performed a muscle puncture in his right hand using acupuncture needles in the abductor pollicis brevis and first interosseus dorsalis muscles for 30 minutes. Immediately after the first muscle puncture the patient was able to write again with mild difficulty (Figure 1b). The procedure was repeated twice a week for a month and then once a month for six months.

The patient has been able to return to his previous work as a writer. The patient has continued working until one year after of the first stimulation with acupuncture needles (Figure 1c). The patient did not take any medication for dystonia during treatment.

Discussion

Our results show that writer's cramp dystonia may improve with deep repeated muscle stimulation in the abductor pollicis brevis and first interosseus dorsalis, with the consequent mitigation of its severity and persistence over time.⁷ Despite the evident motor manifestation of idiopathic focal hand dystonia, it has been recognized that the sensory system performs an important role in this condition.^{1,2,3,4,8} There is much evidence substantiating sensory dysfunction in patients with dystonia: sensory symptoms may precede the appearance of dystonia; certain sensory tricks used by patients may help to relieve dystonic postures and sensory training such as the one used for Braille readings and peripheral blockage may relieve the dystonic posture of the hand.^{9,10} Sensory dysfunction may contribute to a loss of sensory-motor integration and abnormality of the motor output in focal dystonia.^{1,5,11}

The sensory system is a major drive for the motor system and the basal ganglia perform an important role in the central processing of the somato-sensory drive.^{4,5,11} The temporal discrimination, a function of the basal ganglia, and the spatial discrimination, a function of S1, are impaired in dystonia

The sensory dysfunction, however, if not the primary event in dystonia, may certainly contribute to impaired sensorimotor integration and abnormal motor output.⁵

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