Dystonia. Reflexions on movement
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Chapter 8

Sensory trick or placebo?

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Introduction

Some patients with focal dystonia take advantage of certain sensory inputs to alleviate their symptoms. These sensory tricks, also known as geste antagonistique, were once seen as indicative of a psychogenic disorder, but are now viewed as a unique feature helpful in diagnosing dystonia (Hallett 1995). The following case demonstrates the extent of the effect of sensory stimuli on movement and illustrates the problems with the concept of a psychogenic movement disorder.

Case report

A 58-year-old right-handed man with dystonic writer's cramp in the right hand for eight years had learned to write with the clinically unaffected left hand. Writing with the unaffected left hand induced dystonic movements in the right arm resembling the dystonic movements when writing with the right hand. To prevent these 'mirror'dystonic movements he had grown accustomed to sit on the right hand or to push the right hand against the table side during writing with the left hand, which, as he noticed, also improved writing with the left hand (figure).

Discussion

Sensory stimuli can alter the organization of the brain by remodeling central nervous system representations (Merzenich and Jenkins 1993). In dystonia, sensory stimuli play a prominent role not only in alleviating symptoms but possibly also in the development of the disease (Hallett 1995; Byl et al. 1996). The modalities of sensory stimuli influencing dystonic movements are quite diverse. In a patient with laryngeal dystonia background noise appeared beneficial and in some patients even the thought of the sensory trick itself may be helpful (Stojanovic et al. 1997; Greene and Bressman 1998). The presented patient further widens the spectrum of sensory tricks as a heterotopic sensory stimulus appeared beneficial for performance of a clinically uninvolved part of the body. Widening of the spectrum of sensory tricks may have implications for the diagnosis of a psychogenic movement disorder. The central criterion for documentation of a movement disorder as psychogenic is persistent...
relief of symptoms by psychotherapy or placebo (Fahn 1994). However, various forms of psychotherapy and placebo administration may be considered as a mixture of auditive, visual or tactile, sensory stimuli. Therefore, from a pathophysiological point of view, psychotherapy or placebo administration may be similar to other forms of sensory tricks. As such, the central criterion for the documentation of a movement disorder as psychogenic appears unreliable. In addition, to consider a movement disorder to have a psychogenic origin implies a dualistic approach; psychogenic versus organic or mind versus brain. This approach may contradict the view of many brain researchers who consider all mental functions to be an action of the brain (Andreasen 1997). The questionable central criterion and the mind versus brain problem, may explain why an accurate diagnosis of a psychogenic as against an organic movement disorder may be so difficult (Fahn 1994).

Figure. “Amsterdam is een mooie stad” (translation: Amsterdam is a beautiful city)
top: writing with the dystonic right hand
middle: writing with the left hand without sensory trick
bottom: writing with the left hand while pushing the right hand to the table side
References


Merzenich MM, Jenkins WM. Reorganization of cortical representations of the hand following alterations of skin inputs induced by nerve injury, skin island transfers, and experience. J Hand Ther 1993; 6: 89-104.
