OCULO-MANDIBULAR MOVEMENTS IN PARKINSON'S DISEASE*†

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CARMICHAEL and Critchley (1925) described six types of associated eye movements seen in their clinic population. One was an oculo-mandibular movement wherein, if the eyes were rapidly deviated to one side, protrusion and deviation of the mandible to the contralateral side occurred. The associated movements were thought to be "vestigial" in origin.

A patient with Parkinson's disease who exhibited a similar oculo-mandibular movement was studied at Montefiore Hospital. Parkinson's disease is a symptom complex due to widespread diffuse lesions of the basal ganglia, and is characterized by a variety of signs, chief among which are masklike facies, dysarthria, alternating tremor, stooped posture, abnormalities of gait, cogwheel rigidity of the muscles, and diminution of associated body movements.

The ocular findings in Parkinson's disease have been well summarized by Smith (1966); they include vertical and convergence palsies, oculogyric crises, ptosis, blepharospasm, infrequent blinking, nystagmus, vertical optokinetic disassociation, epiphora, spasm of convergence, pupillary changes, and accommodative paresis.

Electromyographic studies of the motor function of the orbicularis oculi and levator palpebrae in Parkinson's disease have recently been described by Loeffler, Slatt, and Hoyt (1966).

Mandibular movements associated with lateral gaze have not been described in this disease as far as we could determine.

Case Report

A 55-year-old white male with a history of Parkinson's disease for 15 years was examined at Montefiore Hospital. He had been taking Artane‡ 10–15 mg. a day for the past 10 years. Visual acuity was 20/30 in each eye. There was ptosis of the left lid, decreased blinking, and a remote near point of convergence (Fig. 1). The extra-ocular movements were normal. On lateral gaze in either direction, there was protrusion of the jaw to the ipsilateral side (Figs 2 and 3). The patient had been aware of this phenomenon for the past 5 years.

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‡ Trihexyphenidyl HCl.

FIG. 1.—Patient with eyes in primary position.

FIG. 2.—Gaze to the right with deviation of the jaw to the right.

FIG. 3.—Gaze to the left with deviation of the jaw to the left.

Discussion

In contrast to Carmichael and Critchley's description of the oculo-mandibular movement, the deviation of the jaw in our patient was to the same side as the direction of lateral gaze. Facial reflexes such as jaw jerk, palmo-mental reflex, and corneo-mandibular reflex are often hyperactive in Parkinson's disease as described by Loeffler and others (1966). The oculo-mandibular movement may be an exaggerated or abnormal facial reflex.

Just as in the Marcus Gunn phenomenon, wherein an anomalous connexion between the external pterygoid muscle, innervated by the mesencephalic root of the fifth nerve, and the levator muscle, innervated by the third nerve, is postulated (Cogan, 1956), the oculo-mandibular movement in this case of Parkinson's disease may be due to an anomalous connexion between the lateral gaze centre and the mesencephalic root of the fifth nerve.

Summary

An oculo-mandibular reflex is described in a patient with Parkinson's disease. On lateral gaze the jaw deviated to the ipsilateral side.

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