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Corneomental Reflex in Early Herniation

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Pullicino et al [1] reported a variation of the corneomandibular reflex (CMR) appropriately named spontaneous palpebromandibular synkinesia and emphasized its value in clinical localization. I recently observed a patient who demonstrated a transient corneomental reflex (CMTR) due to an evolving increase in intracranial pressure. The CMTR was elicited by stimulus of the cornea with a gloved finger, the reflex response consisted of a quick twitch of the ipsilateral mentalis muscle without jaw deviation. An 81-year-old woman was hospitalized with sudden onset of aphasia, right-sided weakness, left gaze deviation and mild drowsiness. CT scan on admission confirmed large left cerebral ischemic stroke in the distribution of the middle cerebral artery with midline shift to the right. The next day, she was noted to be stuporous, with a Cheyne-Stokes breathing pattern. Examination revealed downgaze with reactive pupils, intact corneal reflexes, mild right facial weakness, with persistent right hemiplegia. Right CMTR was easily obtained, and left was absent. Several successive attempts to elicit right CMTR resulted in rapid fatigue. Palmomental reflexes (PMR) were obtainable bilaterally with rapid fatigue. Over the next several days the right CMTR became less prominent. Two weeks after admission, the right CMTR was unobtainable, although the PMR was present bilaterally. The CMTR differs from the CMR since expression of this reflex depends on the mentalis muscle which is innervated by the facial nerve [2]. Clinically, this pathway is verified by corneal stimulation with resultant blinking. Integrity of this tract can also be objectively measured by the blink reflex. The CMR reflex is mediated by the external pterygoid muscle which deviates the jaw forward and to opposite side, and is innervated by the motor branch of the trigeminal nerve.

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The clinical significance of the CMR has been demonstrated repeatedly [1, 4, 5]. Ansink [6] has confirmed the usefulness of the sign in cases of transtentorial herniation and considered this sign to be the earliest and most sensitive of neurologic signs in threatening transtentorial herniation. In contrast, the usefulness of the CMTR has not been studied in the recent literature. This case demonstrates the appearance of a contralateral CMTR with early herniation and the disappearance of the reflex as the clinical picture improved. Whether the CMTR is a more sensitive measure of herniation than the CMR will require further observation with more patients. It should be kept in mind that normal subjects may demonstrate these reflexes. Jacobs and Gossman [7] noted that up to 13% of normal individuals in the 7th decade of life may have a CMR. The CMTR may be seen in up to 15% in normal subjects [8] although systematic studies have not been carried out. Despite this, in an appropriate clinical setting, a unilateral CMTR may herald the onset of early herniation and appropriate treatment should be instituted.

References

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