
Transcranial magnetic stimulation reveals differences between spasmodic dysphonia and muscle tension dysphonia

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Statement of the Problem: Adductor spasmodic dysphonia (AdSD) is a form of focal dystonia resulting in a strained voice quality during speech tasks. The pathophysiology of AdSD is largely unknown and differential diagnosis is challenging due to the shared perceptual features with muscle tension dysphonia (MTD). Considering MTD does not have a neurologic-basis, comparison of cortical excitability, using transcranial magnetic stimulation (TMS), between MTD and AdSD offers a novel approach in differential diagnosis. A direct comparison of cortical excitability in AdSD and MTD has not previously been reported.

Methodology: 10 subjects with AdSD, 8 with MTD and 10 healthy controls received single and paired pulse transcranial magnetic stimulation (TMS) to the primary motor cortex contralateral to tested muscles, first dorsal interosseus (FDI) and masseter. We hypothesized cortical excitability in AdSD would be significantly different than in MTD and healthy and would correlate with perceptual severity in AdSD.

Findings: Cortical silent period (CSP) duration in masseter and FDI were significantly longer and FDI corticospinal excitability (CSE) was significantly lower in AdSD compared to MTD and healthy controls.

Notes: