Case Report

TMJ hypoglossal nerve

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**Abstract**

Chronic neck pain after whiplash injuries is a common and expensive condition which has seen many culprits accused and as many treatment modalities offered. Here we see that cervical and TMJ mobility can be greatly influenced by a restriction in the mobility of the hypoglossal nerve. In this case, one treatment of increasing the mobility of the hypoglossal nerve rendered immediate improvements in range of movement of both the TMJ and tongue.

**Key Words**

Hypoglossal nerve, cervical spine, TMJ, neural manipulation

**Introduction**

56 year old man with extensive medical history including multiple lumbar spine discectomies, full abdominal mesh following parietal peritoneum failure. Multiple MVAs spanning approximately 30 years. Considerable pain with most movement and difficulty walking and sitting.

**Method**

First GL/LL: left supraclavicular brachial plexus superior part. Listening at rectus capitus posterior minor pulled left inferior and pulled the OA into flexion suggesting an anterior dural restriction.

Initial cervical assessment in standing showed 1/3 ROM extension with significant pain and compensation with hip extension. TMJ opening deviated left and tongue protrusion also to the left.

Treatment of the brachial plexus was followed by another GL/LL which went to the left hypoglossal nerve. Elongation treatment was performed and tongue movement was reassessed and the tongue no longer deviated left but protruded in a curled fashion left more superior than right. The right hypoglossal nerve was treated for balance and tongue was retested and shown no curl and straight protrusion. There was a slight TMJ deviation to the right. Another cranial LL went to the Facial nerve Buccinator branch on the right. Treatment on the facial nerve was performed and TMJ movement retested and demonstrated no deviation.

**Results**

Retesting of Csp ROM revealed nearly full extension and improved rotation and side flexion bilaterally. No deviation remained in TMJ opening or tongue protrusion. Three week followup indicated ROM maintained and considerable decrease in pain levels.

**Discussion**

The path of the hypoglossal nerve makes it both vulnerable to constriction with Csp dysfunction but also makes it a possible powerful overlooked treatment area in the treatment of whiplash symptoms. Restriction of the hypoglossal nerve will impact tongue movement and thus also impact the path of the TMJ and associated musculature during vocalization and mastication, leading to further problems in a chronic pain patient.

Glide of the hypoglossal nerve is also necessary for Cervical spine movement especially neck extension. What might look like muscle or even joint restrictions may in fact have a neurological cause of cranial nerve origin as we see in this case study.

Effective, precise manual therapy of the hypoglossal nerve was instrumental in seeing improved ROM of the cervical spine in this case.

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