

## Unilateral Hypoglossal Nerve Palsy

Rawan Ashshi BDS\*, Eric T Stoopler, DMD, FDSRCS, FDSRCPS., Takako I Tanaka, DDS, FDS RCSEd., Thomas Sollecito DMD FDS RCSEd., Department of Oral Medicine, University of Pennsylvania School of Dental Medicine, Philadelphia, Pennsylvania.

### Background

The hypoglossal nerve (cranial nerve XII) innervates all extrinsic and intrinsic muscles of the tongue, with the exception of the palatoglossus muscle, and controls all tongue movements.<sup>1</sup> Although unilateral hypoglossal nerve palsy is uncommon, major causes for the condition include tumors, infection, inflammation, amyotrophic lateral sclerosis (ALS) or neck injury. Manifestations of hypoglossal nerve palsy include difficulty speaking, chewing, and swallowing.<sup>2</sup>

### Case Report

A 78-year-old male complained of lisping speech and inability to whistle associated with visible tongue changes. It started five months after members of his family had flu like symptoms. He denied neck pain, trauma or difficulty turning his head. Medical history was significant for a sulphur amino acid metabolic disorder, ascending aorta dilation, hypertension, renal carcinoma, thoracic aneurysm, and pulmonary nodules. Surgical history was significant for tonsillectomy, partial nephrectomy, and cataract removal. Medications included atorvastatin, multivitamins, low-dose aspirin, sildenafil and irbesartan. Review of systems was negative to dysphagia. He did not experience tingling/ weakness or numbness elsewhere in his face or head region. An extraoral exam was unremarkable except for CN XII abnormality evidenced by decreased strength with tongue movement to the left. The intraoral exam revealed atrophy of the left side of tongue FIGURE-1. Brain MRI with and without contrast showed incidental 7 mm right anterior clinoid meningioma unrelated to patients complaint. Differential diagnosis included left hypoglossal nerve weakness secondary to viral etiology and dysarthria secondary to tongue weakness. The patient was referred to neurology and otolaryngology ENT for occult pathology.

Extensive evaluation, including electromyogram and flexible laryngoscopy, was unrevealing. Clinical symptoms has resolved but visible tongue atrophy remain the same without any intervention after a year.



FIGURE-1: Atrophy of left side of tongue.

### Conclusion

A patient with an isolated unilateral cranial nerve XII palsy can be a diagnostic and therapeutic challenge. An extensive history and oral examination should be performed. Referral to a neurologist and otolaryngologist should be considered to rule out any underlying tumors or systemic conditions.

### References

1. Vilenky J, Robertson W, Suárez-Quian C, The Hypoglossal Nerve. 1st ed. The Clinical Anatomy of the Cranial Nerves; 2015:229-237.
2. Cant A, Collard B, et al. Oral medicine: Isolated unilateral hypoglossal nerve palsy. Br Dent J; 2018; 95:225.