Isolated and unilateral hypoglossal nerve palsy secondary to head and neck trauma is uncommon. The reasons for its infrequency include anatomy, clinical presentation, and mechanism of injury. The hypoglossal nerve is intimately associated with other critical structures of the neck and skull base, making isolated injury difficult to achieve. Because it is a purely motor nerve, the only presenting symptom will be weakness of the tongue. It may not easily be missed due to the prominence of other symptoms seen with concomitant lower body damage.

There is very little documentation of minor cervical trauma as the cause of this type of injury. We present a case report demonstrating a unique diagnosis of inflammatory neuritis after a dental visit.

CASE PRESENTATION

The patient is a 72 year old male with no relevant medical history who went for a routine dental appointment in June of 2016. During the visit his dentist had difficulty clearing a bridge from his left jaw, rapidly snapping his neck from extension into flexion. A week later he noted tongue swelling and went to an outside hospital where he was evaluated for a stroke. He had an MRI, MRA and CT scan at that time which showed no evidence of infarct or vascular abnormality.

He presented to our tertiary care facility one month later. His primary complaint was dysphagia, with difficulty chewing on the left side of his mouth. He denied dysarthria. Review of systems was positive for back pain. On exam, the left half of his tongue was atrophic and deviated to the ipsilateral side with protrusion. This can be seen in Figure 1. He had mild dysphagia, with difficulty clearing a bridge from extension into flexion. Axial view of MRI showing T2 phase. Arrow points to asymmetric protraction of left tongue base into oropharynx. Figure 2 (top left) Axial view of CT scan. Arrow points to asymmetric protraction of left tongue base into oropharynx. Figure 3 (top right) Axial view of MRI showing T2 phase. Arrow points to denervation atrophy with hyperintense signal of the left hemitongue. Figure 4 (bottom right) Axial view of MRI in T1 post contrast phase. Figure 5 (bottom left) Coronal cut of MRI in T1 post contrast phase. Arrows point to asymmetric enhancement of the left hypoglossal nerve within the canal. The imaging performed at the outside institution was reviewed by our radiologist. He noted asymmetry of the tongue with inflammation on the left side representative of myositis. There was also asymmetric protraction of the left tongue base into the oropharynx. This is apparent on the CT scan shown in Figure 2. On MRI, the left side of the tongue demonstrated denervation atrophy with hyperintense T2 signal as seen in Figure 3. No lesions were visible at the skull base or along the course of the hypoglossal nerve. There was osteophytosis throughout the cervical spine but upon further review, the osteophytes were distant from the entire length of the hypoglossal nerve. Because the quality of the previous scans was limited, it was decided to repeat the MRI with finer cuts and closer attention to the skull base. A scan in August showed similar changes to the soft tissue of the tongue. However, we also found the left hypoglossal nerve enhancing throughout the entire course of the canal. This is shown in the axial cut on Figure 4 and coronal view on Figure 5. The canal itself was not enlarged or distorted. The proximal and distal portions of the nerve appeared normal. Again there were no masses or lesions found. A follow-up MRI was performed in November. Interestingly, the tubular enhancement of the left hypoglossal canal was no longer present.

REFERENCES:

De Kock, Isabelle, & Sten, Barbara; Lemmerling, Marc. (2011). MRI appearance of the normal and diseased hypoglossal nerve.