

CLINICAL VIGNETTE

Numb Chin Syndrome: A Benign Diagnosis?

Jacob Gold, MD and Mridula Watt, MD

Introduction

The sensation of chin numbness is an uncommon but potentially serious chief complaint. Numb Chin Syndrome is a relatively uncommon condition characterized by diminished or absent sensation on the lower chin, typically including the lower lip and upper chin. This syndrome is typically caused by damage to the inferior alveolar nerve, a purely sensory nerve enervating that area. This syndrome may be benign but often portends malignancy.

Case Report

GR is a 21-year-old non-smoking male without any significant past medical history who presented with a primary concern of right chin numbness. He noted that his symptoms started approximately one month ago with a sore throat that was associated with right jaw pain. The pain did not respond with naproxen and eventually prompted urgent care evaluation, where he was treated with steroids and a prednisone taper. His pain was resolved but he was left with a complete lack of sensation in a small area of his right chin and lower lip. He had had no prior trauma and no recent dental procedures or other complaints. On physical exam, his only abnormality was absent sensation to light touch and or pain over the right lower lip and part of his right chin. There were no motor deficits. Laboratory analysis was unrevealing with no leukocytosis, normal electrolytes, normal inflammatory markers, an ANA of 1:40.

MRI showed a right oropharyngeal mass measuring 2.4 cm with infiltrative abnormal signal extending to the angle of the right mandible and involving the mandibular canal. The patient was evaluated by ENT and underwent excision of his right palatine tonsil. Pathology showed reactive follicular hyperplasia.

Discussion

A significant challenge in the world of medicine is identifying how thorough and expensive an evaluation should be for unexplained symptoms. Often less bothersome symptoms, such as localized numbness, might be less extensively evaluated. The seemingly innocuous symptom of chin numbness is one that demands a more thorough workup.

Numb Chin Syndrome (NCS) is a disorder of the branches off the mandibular segment of the trigeminal nerve. Specifically, the inferior alveolar nerve or mental nerve have been implicat-

ed. A lesion anywhere along the trigeminal nerve can cause this symptom.¹ There are even reports of metastases to the pons at the origin of the trigeminal nerve causing this syndrome.²

Damage to the inferior alveolar nerve or mental nerve can be from jaw trauma and result in numbness. Damage higher in the mandibular nerve may also lead to weakness of the jaw. Dental procedures are most commonly responsible. Orthognathic surgery (corrective surgery of the jaw), has been reported to commonly injure the inferior alveolar nerve.³ Removal of the third molar also has a fairly high incident of damage to the inferior alveolar nerve.

This patient had no history of trauma to the jaw nor any recent dental procedures or dental infections. In this scenario it is important to obtain imaging to determine the source of the nerve damage. While not as common as traumatic injuries, primary tumor or metastatic cancer can cause NCS and should not be missed.

Multiple case reports have been written about numb chin being the initial presentation of various lymphomas including Burkitt's and also as a site of metastases for many cancers including breast and lung in patients that had been thought to achieve remission.⁴

Conclusion

Numb Chin Syndrome is a disease where the eponymous symptom is caused by a lesion, injury, or compression to the trigeminal nerve, most specifically the inferior alveolar nerve. This patient was evaluated and found to have an oropharyngeal mass consistent with reactive lymphocytosis, a benign condition. His surgical specimen showed no evidence of lymphoma. A review of the literature does not reveal tonsillitis as a cause of this disease. It is important to thoroughly evaluate the cause of NCS in the absence of obvious causes such as trauma or recent dental work.

REFERENCES

1. **Rodella LF, Buffoli B, Labanca M, Rezzani R.** A review of the mandibular and maxillary nerve supplies and their clinical relevance. *Arch Oral Biol.* 2012 Apr;57(4):323-34. doi: 10.1016/j.archoralbio.2011.09.007. Epub 2011 Oct 11. Review. PubMed PMID: 21996489.

2. **Horton J, Means ED, Cunningham TJ, Olson KB.** The numb chin in breast cancer. *J Neurol Neurosurg Psychiatry.* 1973 Apr;36(2):211-6. PubMed PMID: 4708456; PubMed Central PMCID: PMC1083556.
3. **Walter JM Jr, Gregg JM.** Analysis of postsurgical neurologic alteration in the trigeminal nerve. *J Oral Surg.* 1979 Jun;37(6):410-4. PubMed PMID: 220400.
4. **Kuroda Y, Fujiyama F, Ohyama T, Watanabe T, Endo C, Neshige R, Kakigi R.** Numb chin syndrome secondary to Burkitt's cell acute leukemia. *Neurology.* 1991 Mar;41(3):453-4. PubMed PMID: 2006020.

Submitted January 17, 2019