

Chin Numbness as a Presenting Symptom of Malignancy

CHRISTIAN E. BUSTAMANTE, MD; KYLE DENISON MARTIN, DO, MPH, DTM&H; EMILY COLYER, DO

ABSTRACT

Numb Chin Syndrome (NCS) is a sensory neuropathy that was first described in the early 1800s. It has various etiologies, most commonly benign local pathology. However, NCS has been documented as the primary presenting symptom of systemic malignancy, most commonly breast cancer.¹ This is the case of a young male who presented to the emergency department with complaints of a numb chin and was ultimately found to have invasive neoplastic lesions in the right tonsillar and mandibular regions of the face arising from metastatic large B-cell lymphoma.

KEYWORDS: facial paresthesia, Numb Chin Syndrome, neuropathy, lymphoma, malignancy

ABBREVIATIONS: NCS – Numb Chin Syndrome

INTRODUCTION

Isolated symptoms of a numb chin can have various etiologies and origins. (Table 1) In many cases, it involves manifestations of maxillofacial pathology including dental infections and anatomical variances that lead to the compression of nerves innervating the mandible.¹ Interestingly, numb chin can also be a presenting symptom for an underlying malignancy with metastasis to the mental nerve.² In the presenting case, the patient's chin paresthesia was found to be the initial symptom for underlying lymphoma.

Table 1. Differential Diagnosis for Chin Numbness

ACUTE
Dental infection (gingivitis, abscess)
Bone infection (osteomyelitis)
Ill-fitting dentures or implants
Trauma from recent dental extraction or mandibular surgery
Malignancy (typically metastatic disease)
CHRONIC
Diabetes mellitus
Multiple sclerosis
Benign tumor
Prior radiation therapy to region

CASE REPORT

A 31-year-old male with no past medical history presented to the emergency department for evaluation of chin numbness. He complained that for 2 weeks he had a constant, progressively worsening numb sensation over his right chin spreading into his right lower anterior teeth. He denied any trauma, signs of infection, or recent dental surgery.

On review of systems, he endorsed mild abdominal cramping with normal stools for the past month. He became concerned when he queried the Internet regarding his symptoms of a numb chin and subsequently came across research literature associating his presentation with malignancy of the colon. His concern was further supported by a family history of colon cancer on his mother's side at the age of 48.

Abdominal and neurological exam were benign other than mild decreased sensation of the right mandible in the V3 distribution. There was no evidence of dental infection, soft tissue swelling or tonsillar mass.

Although the chief complaint and physical exam indicated maxillofacial pathology, the patient's primary concern was for malignancy due to a strong family history of colon cancer. As such, a CT scan of the abdomen and pelvis was performed. This showed an ileocecal lesion with some surrounding adenopathy and omental caking, concerning for malignancy. Blood work demonstrated a leukocytosis of 17K with abnormal lymphocytes.

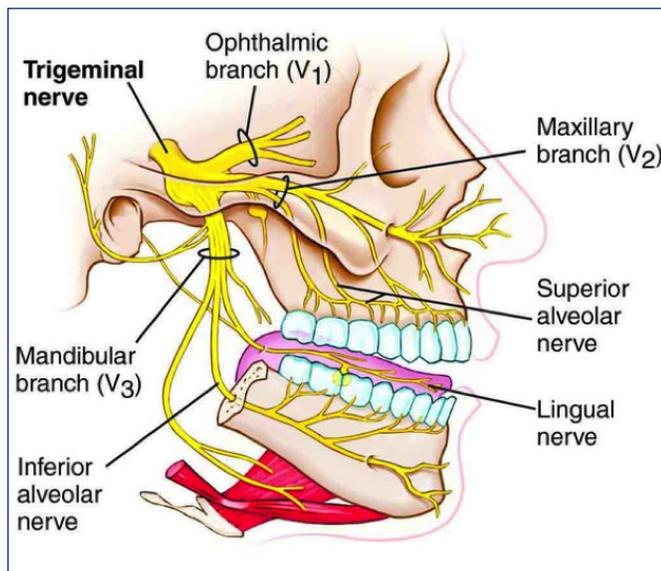
He was admitted to the hospital for gastroenterology, oncology and surgical evaluation. The patient had a colonoscopy performed on hospital day 1, which revealed a 6–7 cm mass in the cecum noted to be polypoid, firm and infiltrative with 60% luminal involvement. Pathology evaluation of biopsies from the mass ultimately found cells concerning for lymphoma. The patient had a bone marrow biopsy on hospital day 2 which showed high-grade large B-Cell lymphoma. PET scan performed on hospital day 3 revealed marked abnormal FDG activity within the abdomen: terminal ileum, peritoneal and omental surfaces. PET scan also showed significant uptake in the right tonsillar region concerning for metastasis into facial structures. MRI was subsequently performed demonstrating a 3.7 x 3.2 cm mass in the right maxillary sinus with local invasion. This mass lesion was found to be the cause of the chin numbness. The patient was discharged on hospital day 5 with a plan to start Modified McGrath Chemotherapy Regimen.

Complete resolution of the patient's chin numbness was noted after four cycles of chemotherapy.

DISCUSSION

Numb Chin Syndrome, although rare, is a well-documented presentation of systemic malignancy. It is characterized by sensory neuropathies presenting with numbness of the chin in the distribution of the mental nerve and mandibular division of the trigeminal nerve.² (Figure 2) It is thought to be due to invasion of neoplasm into local tissue surrounding the mental nerve or even involving the nerve itself.^{1,2} The PET scan in this case supports this theory as it showed highly suspicious activity for metastatic malignancy in the right facial structures. Interestingly, cases have been identified where no local mandibular metastasis was noted, making its presentation perplexing. Though it is nonspecific to any malignancy, NCS has been more frequently associated with metastatic lymphoma and breast cancer, the latter being most common.^{1,3} Other cancers with high metastatic potential have also been described in the setting of NCS.^{2,4} Its presentation is many times the first identifiable symptom and manifestation of an underlying malignancy.¹⁻⁵ CT imaging of the maxillofacial region should be considered as well as additional imaging based upon patient presentation. In this case, it was fortunate that the underlying malignancy was found on CT of the abdomen and pelvis. This led to further imaging and identification of the maxillofacial lesion causing the patient's symptoms.

Figure 2. The Mandibular Branch (V3) of the Trigeminal Nerve



CONCLUSION

Although Numb Chin Syndrome presents more frequently in the setting of dental abscesses, gingivitis, local trauma and benign tumors, it is imperative that emergency medicine physicians understand that this presentation could have a more significant life-threatening origin, such as metastatic disease.

References

1. Baskaran, Ramesh Kapa, et al. Numb Chin Syndrome – a Reflection of Systemic Malignancy. *World Journal of Surgical Oncology*, BioMed Central, 9 Aug. 2006.
2. Assaf AT, Jürgens TP, Benecke AW, Riecke B, et al. Numb chin syndrome: a rare and often overlooked symptom. *J Oral Facial Pain Headache*. 2014 Winter;28(1):80-90.
3. Chapa NJ. Numb chin syndrome: a signal of underlying concern. *J Dent Hyg*. 2014 Dec;88(6):348-52.
4. Tejani N, Cooper A, Rezo A, Pranavan G, Yip D. Numb chin syndrome: a case series of a clinical syndrome associated with malignancy. *J Med Imaging Radiat Oncol*. 2014 Dec;58(6):700-5.
5. Lata J, Kumar P. Numb chin syndrome: a case report and review of the literature. *Indian J Dent Res*. 2010 Jan-Mar;21(1):135-7.

Authors

Christian E. Bustamante, MD, Emergency Medicine Resident, Kent Hospital, Warwick, RI.

Kyle Denison Martin, DO, MPH, DTM&H, Academic Faculty, Department of Emergency Medicine, Kent Hospital, Warwick, RI.

Emily Colyer, DO, Clinical Faculty, Department of Emergency Medicine, Kent Hospital, Warwick, RI.

Correspondence

Christian Bustamante, MD
Division of Emergency Medicine
Kent Hospital
455 Toll Gate Road, Warwick, RI 02886
CBustamante@KentRI.org