

# Neck-Tongue Syndrome (NTS)

---

# What is Neck-tongue Syndrome?

---

- Neck-Tongue syndrome (NTS) is manifested by brief attacks of neck or occipital pain, or both, brought out by abrupt head turning and accompanied by ipsilateral tongue symptoms.
- First case was described by **Cyriax**.
- **Lance and Anthony** were the first to provide a detailed neuroanatomic explanation for the disorder in 1980.

# Diagnostic criteria by International Classification of Headache Disorders (ICHD), 3<sup>rd</sup> edition.

---

- A. At least two episodes that fulfill criteria B through E
- B. Sharp or stabbing unilateral pain in the upper neck, or occipital region, or both, precipitated by sudden turning of the neck, with or without simultaneous dysaesthesia.
- C. Concurrent abnormal sensation, or posture, or both, of the ipsilateral tongue
- D. Duration from several seconds to several minutes
- E. Not better accounted for by another ICHD-3 disorder

# Epidemiology & Clinical features

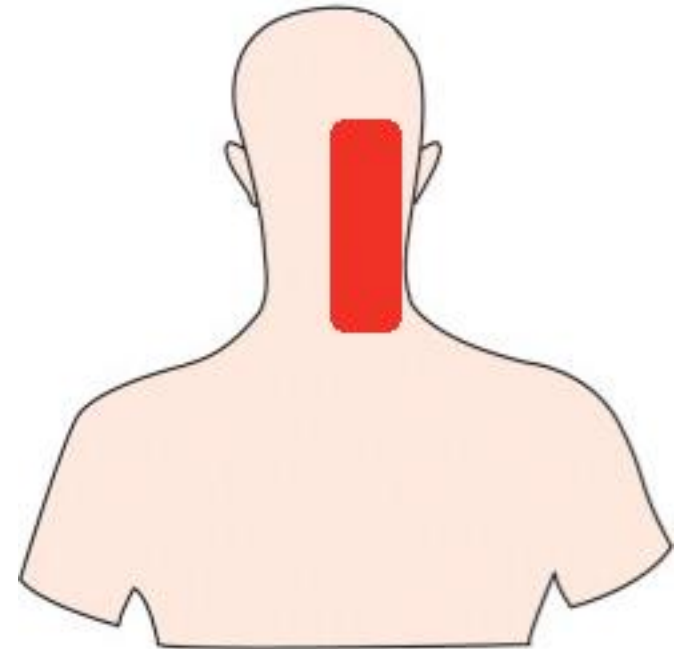
---

## Epidemiology:

- NTS is an underreported syndrome with 0.22% prevalence in Vaga study.
- Equal incidence in both genders.
- Mean age of incidence is 16years.

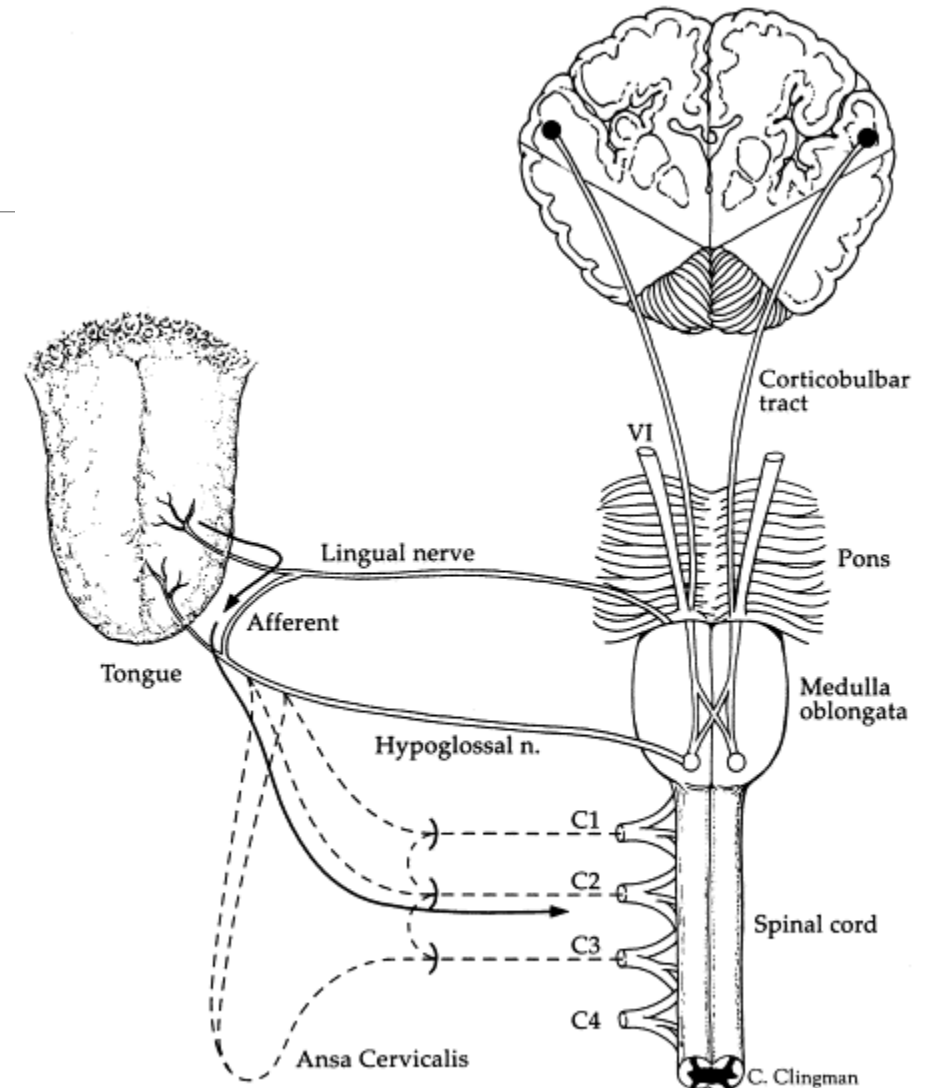
## Clinical features:

- Neck pain, stabbing in nature.
- Ipsilateral dysaesthesia (Abnormal sensation) of tongue.



# Pathophysiology

- NTS neck pain involved C2 (dorsal rami), given its vulnerable location in the atlanto-axial/ C1–C2 space subject to compression during neck rotation.
- Intermittent pain may be due to temporary abnormal subluxation of the lateral C1-2 joint straining the joint capsule.
- Tongue numbness is caused by compromised afferent fibers from the lingual nerve via the hypoglossal nerve (ventral rami of C2 gets proprioception fibers from hypoglossal nerves).



©Baylor College of Medicine 1999

# Types of NTS:

---

- Uncomplicated NTS: Neuroanatomical abnormalities due to joint laxity.
- Complicated NTS: HLA-B27 disorders, Degenerative cervical joint disorders.

# Differential diagnosis:

- Cervicogenic headaches.
- Vertebrobasilar insufficiency.
- Cervical radiculopathy.

# Diagnosis and Treatment

---

## Diagnosis:

- Clinical diagnosis.
- Computed tomography and magnetic resonating imaging are needed to rule out etiologies of complicated NTS.

## Treatment:

- Uncomplicated NTS patients are advised activity modification (cervical brace, avoiding triggers) and symptomatic treatment (NSAID, amitriptyline, tizanidine).
- Complicated NTS patients are targeted towards treating the underlying etiology.

# References

---

1. Cyriax, J . Textbook of Orthopaedic Medicine, 4th edition edn. London: Cassell, 1962, pp. 158-158
2. The International Classification of Headache Disorders, 3rd edition . Cephalalgia 2018; 38(1): 176.
3. Sjaastad O, Bakketeig LS. Neck-tongue syndrome and related (?) conditions. Cephalalgia. 2006 Mar;26(3):233-40. doi: 10.1111/j.1468-2982.2006.00926.x. PMID: 16472328.
4. Gelfand AA, Johnson H, Lenaerts MEP, Litwin JR, De Mesa C, Bogduk N, et al. Neck-Tongue syndrome: A systematic review. Cephalalgia. 2017;38(2):374–82.
5. Hu N, Dougherty C. Neck-Tongue Syndrome. Curr Pain Headache Rep. 2016 Apr;20(4):27. doi: 10.1007/s11916-016-0555-y. PMID: 26984539.